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These guidelines give specific suggestions as to where research resources might be employed to yield greatest returns in terms of usefulness for the formulation and implementation of public policies with respect to the development, allocation, and utilization of human knowledge and skills in our rapidly changing economy. Longitudinal studies are suggested to determine more precisely the kinds of economic, psychological, and sociological problems encountered by the disadvantaged over time, the reasons for their existence, and the most promising policy approach to mitigate and deal with these problems. Eight seminars were conducted for the development of this research guide and related subjects, and the results of these discussions and analysis are included. As a result of their work, four major subject-matter areas were suggested, namely, Human Resources Investment, Supply, Demand, and Market and Mobility. Each of these areas is broken down into specific research topics with an indication of priority, and covering a wide range of material related to economic and non-economic factors. (FP)

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THE DEVELOPMENT AND UTILIZATION OF HUMAN RESOURCES;

A GUIDE FOR RESEARCH.

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PREFACE

A series of eight seminars was conducted between December, 1964 and April, 1966 under the auspices of the Institute for Research on Human Resources under a contract with the U. S. Office of Education. These seminars were designed to achieve four objectives: first, to establish the significant questions in certain broad areas in the development and utilization of human resources; second, to determine what gaps existed in our knowledge in these areas; third, to suggest priorities in research; and fourth, to generate research and experimental programs. The seminars were attended by experts from various disciplines. The results of these deliberations, particularly with respect to the first three objectives, are fully explored in this report.

Although the original purpose of the seminars was to concern itself with the narrow areas of education, training, and retraining, it became quite evident, from the discussions at the first and second seminars, which were exploratory in nature, that the purpose should be broader in scope. It was clearly recognized that the problems of education and training are not isolated phenomena but reflect, in a large measure, the broader economic and social issues of the community, in particular, and of society, in general. Thus, subsequent seminars were concerned with such questions as the supply of human resources (with particular emphasis on the disadvantaged and minority groups in our society), the short-run and long-run demand for labor, the investment in human resources (with emphasis on cost-benefit analysis), and labor markets and mobility.

Although the results of these seminars are discussed thoroughly in this report, it should be emphasized again that research in the broader social and economic areas is a precondition for research in the narrower areas of education and training. For example, unless further research is done on such questions as how employers hire workers and what the promotional ladders are in these companies, how can one devise an effective vocational education program? Another illustration: unless we know the future demands for occupations and skills, how do we know what occupations and skills should be trained for? A third illustration: unless we explore the psychological processes of the disadvantaged in terms of initiative and motivation, how can we devise effective guidance and counseling programs?

It is within this framework that this report on a guide for research should be read.

Bettie Milner and Claudio Herzka, graduate assistants in the Department of Economics, assisted the authors in the preparation of this report.

The persons listed in the Appendix as seminar participants contributed significantly to this study. In no way, however, are they to be held responsible for any views expressed.

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1

INTRODUCTION

The purpose of this research guide is to identify where research might yield "greatest" returns in terms of usefulness for the formulation and implementation of public policies concerning the development, allocation, and utilization of human knowledge and skills in our rapidly changing economy.

The general orientation is toward research which may aid in the resolution of the problems of those categories of human resources which are underdeveloped and/or under-utilized — sometimes called the "disadvantaged" by reason of geography, sex, age, race, or low levels of skill or education. It must be emphasized, however, that such problems cannot meaningfully be considered in isolation. Any solutions necessarily relate to the wider context. Therefore, concern for meaningful research must be twofold: specific to disadvantaged groups and general with respect to the broad context to which solutions of their problems must relate. For example, problems of heavy unemployment of young Negro women in rural southern West Virginia can only be understood and mitigated in the wider context of an understanding of relevant institutions, situations, and problems of this and other groups, both within and outside Appalachia. Therefore, the research guide reflects the conviction that a broad concern for the development, allocation, and utilization of all levels of human resources, in thriving as well as in "sick" areas, is necessary for the effective formulation and implementation of public policies related especially to the disadvantaged. In turn, such research is necessary for the development of research in the narrower area of education and training.

1. *Public Policy*

The formulation of a guide for research can have significance only in terms of some meaningful social objectives. A necessary first operation, then, in constructing a guide is to set forth the public policies as revealed in new legislation, especially at the federal level. Most of the significant laws present clear statements of public policies which they seek to implement. Some of them are cited below.

The Manpower Development and Training Act of 1962 declares that because certain occupational shortages exist, even in time of high unemployment, and because many skills have become obsolete, the government must promote the identification of, and provision for, current and prospective manpower shortages. It must make efforts to assure that men, women, and young people will be trained and available to meet shifting employment needs; that the unemployed and underemployed be assisted in providing themselves with needed skills; and that opportunities be provided for them to acquire new skills. The Act further states as public policy the government's obligation to appraise the nation's manpower requirements and resources and to develop and apply the information and methods needed to cope with the problems of unemployment resulting from technological change and from other persistent causes.

The Economic Opportunity Act of 1964 declares as public policy the elimination of "the paradox of poverty in the midst of plenty in the Nation by opening to everyone the opportunity for education and training, the opportunity to work, and the opportunity to live in decency and dignity." The Act seeks "to strengthen, supplement, and coordinate efforts in furtherance of that policy."

The Vocational Act of 1963 seeks "to maintain, extend, and improve existing programs of vocational education, to develop new programs of vocational education," and to provide combinations of vocational education and part-time employment so that persons of all ages may "have ready access to vocational training or retraining which is of high quality; which is realistic in the light of actual or anticipated opportunities for gainful employment; and which is suited to their needs, interests, and ability to benefit from such training."

The National Defense Education Act of 1958 declares that our national security "requires the fullest development of the mental resources and technical skills of its young men and women . . . . We must increase our efforts to identify and educate more of the talent of our Nation. This requires programs that will give assurance that no student of ability will be denied an opportunity for higher education because of financial need; will correct as rapidly as possible the existing imbalance in our educational programs which have led to an insufficient proportion of our population educated in science, mathematics, and modern foreign languages and trained in technology."

The Higher Education Facilities Act of 1963 states that "the security and welfare of the United States require that this and future generations of American youth be assured ample opportunity for the fullest development of their intellectual capacities" and that it is "incumbent upon the Nation to take positive and immediate action to meet these needs through assistance to institutions of higher education, including graduate and undergraduate institutions, junior and community colleges, and technical institutes, in providing certain academic facilities."

The direction of future public policy related to the development, allocation, and utilization of human resources seems to have been clearly established by present legislation, such as that cited above. It will probably be the public policy of the nation that there be increasing public encouragement of the fullest possible development and utilization of useful knowledge and skills of our people and that lack of personal financial resources should not bar any individual from full opportunity to develop his abilities and interests.

Clear indications of this trend are found in the recommendations in the report of the National Commission on Technology, Automation, and Economic Progress, issued in 1966, which call for increased public responsibility for more extensive and better education at all levels for all qualified students without restriction due to lack of family financial resources. The report calls for a nationwide system of free public education through two years beyond high school and for the availability of education, training, and retraining throughout the lives of individuals. The recommendations call for improvements in matching men and jobs through more and better information concerning present and future opportunities and the establishment of computerized nationwide service for matching men to jobs. It further calls for improvements in long-range planning, and in short- and long-term forecasts of local and regional occupational demand and manpower availability.

2. *Framework of the Research Guide*

In order to identify research priorities systematically, the major elements of the field of human resources have been organized into four broad subject matter areas:

1. Supply and utilization of human resources, with special reference to major forms of discrimination;
2. Present and anticipated demand for human resources;
3. Investments in human resources; and
4. The markets for and mobility of human resources.

For each of these four subject-matter areas consideration was given to the following:

1. The identification of the major problem areas or questions, and their classification by relative importance for policy formulation and/or implementation;
2. The appraisal of the extent and operational value of relevant knowledge and of research in progress;
3. An appraisal of the susceptibility to further research; and
4. Suggestions for priorities for future research, based on the preceding three considerations.

To carry out this task primary reliance was placed on the knowledge and opinions of groups of experts in the various subject-matter areas obtained through a series of eight seminars. These experts represent a variety of fields and disciplines appropriate to the particular subject-matter area. Although all relevant work completed, or in progress, could not be fully searched and catalogued, some reliance was placed upon selected bibliographies.

Perhaps an attempt to formulate a comprehensive research guide may be too ambitious. The identification of six or eight bright ideas for meaningful research might mean more than an attempt to develop a more comprehensive guide. It seems clear, however, that the likelihood of generating a few bright ideas is not inconsistent with the present effort.

There is no question that there are major difficulties in any attempt to develop an approach or framework to the problem of the development and better utilization of human resources, an approach which is sufficiently encompassing, systematic, and precise that it includes every possible problem or emphasis in the vast and complex field which touches in some degree virtually the entire spectrum of human knowledge. It should be emphasized that the problem of the appropriate framework was a matter of continual concern and discussion in all the seminars and among the staff. This particular framework and various alternatives were discussed and analyzed in considerable detail throughout the entire project.

The decision to use the particular framework summarized above and reported in greater detail throughout the remainder of this report was not made in the belief that it is the only one which is defensible. The state of knowledge in this emerging area of research and policy concern is, after all, sketchy and limited; many important questions are only in the process of being formulated; and many seemingly useful techniques of analysis are only in an embryonic stage.

In the end, the choice of this approach was made because it is sufficiently broad to include what at this time appears to be a significant number of critical issues in the field and because it is a useful way of classifying materials into categories which have been used by most earlier researchers and are therefore reasonably familiar to most persons presently working in the field.

In the division of the human resources field into four major subject-matter areas, some overlap is inevitable. The designation of specific subject-matter areas, and the structuring of seminars and bibliographical work accordingly, is not designed to offer a precise topology for the unambiguous categorization of every element. It is designed only to help identify the most significant issues and variables and their interrelationships.

The major subject-matter areas of this framework bear names which economists often use in structuring their analysis, such as "supply," "demand," "investment," and "markets." However, it cannot be overemphasized that this approach includes considerable material of the greatest importance which is relevant to the other behavioral and social sciences. This framework is entirely consistent with the interdisciplinary nature of this approach and its results. It in no way "squeezes out" or downgrades the many non-economic considerations of utmost importance to this project. In fact the research priorities reflect these.

The general approach is to consider problems of national importance, looking to less aggregated (especially local) levels as appropriate for the understanding of many of these problems. An alternative approach would be to start from the local or community level, to assess the goals and problems of particular communities, and to design research priorities accordingly. The "from the top, down" approach will probably be of more general usefulness, although for particular communities it would certainly be essential to assess research priorities "from the bottom, up."

It should be carefully noted that success in determining research priorities depends largely on the ability to forecast the payoff or success of various research efforts. Unfortunately, little is known about this except that the likelihood of success is clearly dependent on the quality of the specific researchers. Problems of doubtful face value pursued by able and imaginative researchers may have considerably higher payoff than more urgent research topics pursued by less able men.

One of the major difficulties encountered in any attempt to compile a research guide occurs in seeking to appraise the extent and relevance of existing knowledge and research in progress. The recent upsurge of research in the field of human resources by public and private agencies and by individual researchers has not been accompanied by a rationalization of information regarding these diverse research activities. There is no single source, or even a small number of sources, which can be tapped for precise information in this regard. The present effort sought to meet this problem by bibliographical searches within the limits of time and resources available for such purposes, and by drawing upon the collective knowledge of the group of experts in attendance at the seminars. It can only be hoped that the near future will see the development of an information register of "research in progress" to meet this obvious and important need.

This research guide should be reviewed periodically in order to keep it current and relevant to changes in the environment and needs and to the growth in knowledge. It should also identify present and anticipated critical issues with respect to the development, allocation, and utilization of human resources. The nature of anticipated critical issues will depend on assumptions about future levels and shifts of economic activity, impact of technology, etc. Major environmental changes which would significantly influence future research priorities are not usually abrupt but can be anticipated and, to some extent, incorporated into the research guide.

The research guide should identify the most significant variables whose interrelationships will be important to decision making. This can be conceived as a "network model of variables." A review of what is known about the variables and their interrelationships will reveal critical "missing links" and corresponding research priorities. However, these priorities should be modified by the availability of information, methodologies, and human and material resources to implement them. The means of identifying and obtaining relevant information and the development of efficient methodologies may, themselves, constitute research topics of high priority.

3. *The Seminars*

Two background seminars covered especially research, development, and demonstration in adult training and retraining. Six seminars dealt specifically with the development of this research guide. The first of this latter group considered the over-all problem and the appropriate approach to it. The next four seminars considered the specific subject-matter areas. The final seminar reviewed tentative conclusions concerning the subjects on which research is most needed. Participants were asked to review, before each seminar, the relevant materials, including the conceptual approach and selected bibliographies, and to submit written statements after the seminar discussions.

The following is a list of the seminars. The agendas and lists of participants are set forth in Appendix A.

I. Background seminar - labor markets and skill training as they relate to community action programs.

II. The relationship between vocational and technical training and community needs.

III. Identification of major problem areas and of major questions concerning development and utilization of human resources in a dynamic economy.

IV. Supply of human resources -
    A. Present and anticipated stocks of knowledge and skills.
    B. Utilization of human resources, especially with respect to major forms of discrimination.
V. Demand for human resources - present and future.
VI. Investment in human resources; responsiveness of supply to demand. Viability of major means ("education" in its widest sense) for developing knowledge and skills.
VII. Human resources markets and mobility.
VIII. Over-all review of priorities for research.

The results of the seminar and staff discussions and analyses are fully set forth in subsequent chapters. It would be desirable, however, to list certain common themes which ran through these seminars. An understanding of these themes might be of considerable help to the reader in evaluating the suggested priorities for research which are listed in Chapter VI.

4. *Common Themes*

1. One of the most important conclusions drawn from seminar discussions is that there are many critical needs for better data in most subject-matter areas. Without more and better data, productive research will be seriously impeded. Again and again in the consideration of particular subject-matter areas data shortcomings became painfully apparent. For example, there are not available, even in industrial states, the numbers of public high schools graduates from various specialities within vocational education.

Even where aggregate data do exist, there is a lack of data disaggregated to levels most relevant for the scope of decision-making. For example, even excellent national estimates of anticipated demand for certain skills would have little relevance for guiding the decisions of local school boards.

No inventories exist of the knowledge and skills being produced by our tremendous investments in education, of those going into retirement, or of those who are underemployed or unemployed. For example, even the crudest measures of the vast reserve of important knowledge and skills embodied in women and others who are not currently part of the labor force are not available.

2. Although changes in the level of employment and unemployment may require a different ordering of research priorities, the problems of the disadvantaged which have been emphasized persist even during times of full employment, though to a lesser extent. There is much too

little known about the precise relationship between various levels of gross national product and the employment effects accompanying each particular level, and the reasons for these differential effects, particularly as these relate to the hard-core unemployed among disadvantaged groups. In effect, these comments point to a need to establish better the relationship between macro variables and the manner in which these translate themselves out at the micro level, and vice versa.

3. There is a pressing need for longitudinal studies in all of the subject matter areas. Most considerations of the problems of unemployment have found it difficult to incorporate dynamic elements. Consequently, too little is known about the kinds of changes which take place over time and the reasons for these changes. What happens over time to the hard-core unemployed and their view of the world of work and their place in it? What kinds of incentives do they perceive, and how do they behave and react toward various situations? What happens to employer attitudes and behavior toward the disadvantaged worker? Longitudinal studies appear necessary to a more meaningful formulation of the problem of motivation, initiative, and behavior among the disadvantaged. Little can be accomplished in measuring the effects of various investments in human resources unless the experiences of individuals can be traced through time. The operation of markets for human resources clearly has a time dimension about which too little is known.

4. More subnational, and especially local, studies should be conducted in all areas. The need here is imperative, for the thrust of present public policy, which is likely to continue into the future, is to place heavy responsibility and initiative upon local and/or regional areas for working out solutions to their particular problems involving human resources. In the planning and implementation of these programs there are substantial difficulties in translating national studies and data into effective local or regional programs. The latter are likely to suffer unless and until they are developed in the context of the community involved and its particular social and economic mix.

5. The study of the effects of on-going anti-poverty and other projects is needed, and provision for independent research should be built into these action programs. The American tradition of pragmatism in the formulation and execution of public policy has had as its consequence the failure to provide a systematic record of the effects of programs by failing to provide for research and evaluation as part of the operating programs from the outset. Too often the research and evaluation that does take place has become the province of the agency con-

ducting the program and is initiated and carried out after the program has been developed. The various strands of the anti-poverty program, scattered and disjointed as they are, are not likely to be rendered capable of assessment of success in the achievement of their objectives, lacking the systematic provision for research and evaluation built into the action program. This would provide for a more scientific basis for the research and evaluation and for a feedback into the action program itself.

6. The human resources needs and implications of new social legislation should be assessed during the planning and subsequent stages. This is not to argue that no policy should be attempted in the absence of all the data that would be desirable. Yet in programs which carry with them long-term commitments to rationalize and produce particular complexes of skills, it would aid rational consideration and discussion of these programs to have some reasonably precise notions of the quantity and quality of skills needed to the successful implementation of such programs.

7. Researchers and research sponsors should improve the means by which research results are disseminated to potential beneficiaries. This has particular reference to the problem of bridging the gap between research and research results and the policy makers and practitioners in the various programs concerned with human resources. Another aspect of the same point is the problem of apprising researchers of on-going and completed research projects. There has been far too little attention paid to this important part of the process of translating research findings into on-going and up-coming programs, to the detriment both of the most effective research and of the most effective programs.

8. In-depth studies of present employer policies and practices relating to hiring, promotion, training, incentives, retirement, etc., should be carried on. The American economy relies preponderantly on private firms to utilize and develop human resources. Yet relatively little is known about how private employers proceed with this task. Typically, the assumption is made that employers are rational in the conduct of their activities pertaining to human resources, and surely most employers believe that they are acting in a self-interested way. Yet this assumption is not demonstrably correct unless the human resources policies of employers are known in some detail through the entire complex of intra-firm activities. Most labor market studies have concentrated on inter-firm relationships and adjustments, but little has been done with the subject of intra-firm activities and their relationship to the external market.

9. There is a need to develop and relate effectively new or proven tools of analysis, especially cost-benefit analysis, where the nature of the problem permits their effective utilization.

Cost-benefit analysis is in its infancy, but it holds considerable promise for casting more light on the perplexing problem of measuring the effectiveness of public expenditures where the "product" of these expenditures may not get into a market where its value can be measured by the usual competitive tests. It seems imperative to develop sharper tools for this purpose than are now available as consideration is given to undertaking programs in various directions. Cost-benefit analysis, if effective, can provide a more rational base for decision-making in the adoption and implementation of policy.

2

THE SUPPLY OF HUMAN RESOURCES

At the outset it is important to make clear that in the analysis of the problems of employment and unemployment it is impossible to separate and to isolate the forces of supply and demand. Economists have long recognized the close relationship between aggregate employment of the supply of human resources and the aggregate demand for goods and services and the human resources necessary to their production. Moreover, the effective supply currently available or potentially available for a given occupation or in a given industry will be related to the conditions of demand in that occupation or industry. Nevertheless, there is merit in considering the operative forces governing supply independently of demand conditions as a first step in acquiring better knowledge and understanding of employment and unemployment.

It was not the purpose of this research guide to attempt to resolve the dispute among economists regarding the root causes of unemployment, that is, whether unemployment is basically attributable to deficiencies in effective demand or to changes in the structure of the economy. However, for purposes of discussion, the following assumptions were made regarding the nature of current unemployment. There is evidence to suggest that an important part of continuing high-level unemployment can be traced to a sponginess of effective demand for the economy as a whole. Despite high level private expenditures and the spending associated thus far with the unsettled state of the world and the implementation of various welfare programs at home, aggregate demand has not been sufficiently high to provide the bouyancy to the labor market which approximates full employment. On the other hand, there are important constraints imposed on the unlimited and vigorous use of monetary and fiscal policies needed to secure full employment by this route. One of these constraints is the fear of inflation, realized or potential. Although there is some historical evidence that gently rising price levels provide a congenial environment for economic growth, the fear of inflation effectively blocks full usage of the monetary and fiscal tools sufficient to move the economy to full employment. A second constraint, historically operative to impede the full utilization of aggregate tools, is the impact they would have on American economic relations with the rest of the world— the so-called "balance-of-payments" constraint.

The upshot of the two constraints is to impose limits on the use of aggregate techniques to secure full employment. It may well be that the constraints become operative as we level off at 4 per cent unemployment, well above a reasonable definition of full employment. To reduce unemployment further, other techniques must be pressed into use. These techniques generally involve more localized and refined measures applicable to regions, states, or localities; or to particular groups in the labor force among whom unemployment rates are inordinately high. Thus far we are only on the front edge of this kind of experimentation, which is taking place on a limited scale in the face of vast ignorance of many facts. It is clear that unemployment is not egalitarian in its impact even as the labor market becomes brisker. It strikes with severity at specific groups of the labor force—the young worker, the Negro, women, and older workers.

The seminar on the supply of human resources chose to place its emphasis on the present unemployed or, more specifically, on the sectors of the population and labor force which have experienced disproportionately high rates of unemployment even as the economy in general has been expanding. Because these people are unemployed, maybe even unemployable in the current state of the labor market, they are poor. And being poor, they suffer inadequate current levels of living which may indeed be passed on from generation to generation if unemployment persists.

The unemployed groups which were selected for attention in this seminar were (1) the older workers, (2) women, (3) youth, and (4) Negroes.

This chapter is divided into the following general components:

1. General considerations for research applicable to all the various groups included in the hard-core unemployed;
2. Considerations relevant to each particular group in which peculiar problems of employment or employability are present; and
3. Suggested priorities for research in the area of the supply of human resources.

Research Pertaining to the Problem of Unemployment Among the Disadvantaged Workers in General

There was a consensus that the problem of unemployment among the disadvantaged was so important that the research should be directed to the question of how to improve their employability by identifying the causes of their unemployment, by exploring the usefulness of techniques designed to upgrade their skills and potential, by identifying specific institutional and attitudinal barriers to their fuller utilization, and by testing and evaluating present programs designed to deal better with their problems. Broadly speaking, areas for meaningful research broke down into the following major categories: (1) historical studies, (2) methodological studies, and (3) research concerned with raising the productivity of disadvantaged workers.

1. *Historical Studies*

The past can provide insights into the nature of particular employment problems (their origins and genesis). More particularly, it would be useful to have additional information about human resource utilization during periods of full employment and during periods of unemployment. Among such possibilities are several of importance.

A study of the work experiences of new entry workers and of younger military personnel, if carefully designed, would give much information on the successful and unsuccessful methods for teaching a variety of skills and attitudes for successful performance, controlling for intelligence, educational achievement, and the many aptitudes on which military and civilian organizations collect data. This would give some time dimension to the "trainability" and "employability" issue and would be especially interesting in developing relevant employment requirements and workable training techniques.

Research on the historical experience in employment designed to determine the factors responsible for the differential experiences of Negroes, older workers, women, and youth in acquiring jobs in different kinds of firms classified by degrees of competition, size, whether branch plant or single-plant firm, nature of the product market, etc., should cast considerable light on the problems of employment of the disadvantaged. Such studies would suggest the reason why some kinds of companies and groups are more willing than others to hire disadvantaged groups. They would also suggest strategies and tactics in guiding policies to improve the hiring and upgrading of more disadvantaged workers.

Generalized studies at the economy level might be made to show the interdependence of various kinds of resource development programs and such economic objectives as full employment and economic growth. Studies of this kind have been undertaken in Scandanavian countries, which suggest the need to pay more explicit attention to this problem in the United States.

There is need to study the possible effects of protective legislation on the employment of certain groups. To what extent, for example, has this kind of legislation caused employers not to hire women, youth, older workers, or Negroes.

There is a serious knowledge gap about the costs of unemployment. Retrospective studies are needed to develop better measures of the social costs of intermittent unemployment and its effect on skill retention and incentives to work, the loss of which must be counted a social cost not now accounted for in our traditional measures of the costs of unemployment. The same logic exists for the need to study the measurement and costs of underutilization of components of the labor force, particularly if this underutilization is long-run and persistent, as may be the case with women and older workers.

2. *Problems of Data*

There was universal agreement that there are serious data limitations at present which make it impossible to make many significant generalizations or to get at fundamental issues. Most of the available data at this time are national data which may have limited usefulness in getting answers to problems at the points at which unemployment coagulates. Some communities have more unemployment than others; there are wide differences among them in the rates of unemployment among the disadvantaged. Needed now are disaggregated data, by age, sex, race, skill, personal backgrounds, regions, localities, and labor markets. None of these is now available in the detail necessary to gain insight into the nature of particular kinds of problems among these groups.

State and local research agencies should strive to link their new statistics and special studies into the existing time series which have acquired widespread recognition and use. If welfare programs are to be successful, they should produce changes in existing series of employment, unemployment, welfare need, etc. Some studies will of necessity be one-shot affairs, designed to answer a specific local problem and subject to discontinuance when the answer is obtained. But many of the studies which local agencies and individual researchers will conduct should be interrelated sufficiently with continuing series from the past so that they can help furnish answers about the relative success of various programs.

If at all possible, local research agencies should devote some attention to the development of suitable administrative statistics in the operating agencies, insofar as they have the opportunity to do so. In new agencies, administrative statistics are often drawn up with primary emphasis upon budgetary and operating needs, and with a minimum of thought to research and policy-making implications. This is a difficult problem, and administrators often have neither the time nor the patience to be bothered with esoteric questions. However, there are times and circumstances when relatively simple and readily understood reporting could be incorporated into the administrative statistics of the operating agencies.

Perhaps, at first, research which is linked to operating agencies and programs should be directed to subjects which are practical, feasible, and down to earth. Simple and superficial answers are often needed in the early stages in order to clear the ground for the more complex analyses. The receptivity of administrators to research cooperation is greater when they themselves can see the need for answers.

Seriously lacking are usable data on the kind of skills available among the unemployed. What kind of inventories are available, and what additional ones would be most useful in matching available supplies of human resources and available job opportunities? Most helpful in this regard would be those data at hand community by community, particularly in a situation in which aggregate unemployment is falling and the phenomenon of labor shortages in particular skills, occupations, and locales is becoming more common.

3. *Problems of Methodology*

The most extensive studies of the labor market, an important part of which is the supply of human resources, have been carried on by economists. In general, economists have approached this problem by making use of the technical apparatus of the discipline which has been developed to consider the general complex problem of the optimum allocation of resources among alternative uses.

In order to deal with this immensely complex problem, economic theory has of necessity been forced to make limiting and simplifying assumptions about many aspects of markets in order to organize thinking about the allocation problem. Among them are the following behavioral assumptions: (1) entrepreneurs will attempt to maximize profits; and (2) consumers or households will attempt to maximize satisfactions. Typically, economic analysis of the labor market has been particular—that is, it has concerned itself with one particular market, on the assumption that other markets will remain unchanged while this analysis is proceeding.

It should be pointed out that this theory was developed not necessarily to explain how markets actually operate, but to make manageable an analysis of how resources would be optimally allocated if all the conditions posited by the theory were, in fact, obtained.

However, when practical problems occur, such as unemployment in particular markets or among particular components of the supply of human resources, the theory is asked to explain its causes in order that satisfactory policy can be developed to deal better with the problem. Thus, the theory developed for use in a world of perfect markets and rational behavior is pressed into service to cope with a problem arising in a world of less than perfect markets and of less than rational (in an economic sense) entrepreneurs and workers. In this setting the theory must be used very gingerly indeed, with a full appreciation of its strengths and limitations. Its applicability will depend on how closely its assumptions are met in the situation at hand.

The question of the validity of the behavioral assumptions underpinning orthodox theory of the operation of labor markets, particularly those on the supply side, was raised in the seminar. There was considerable sentiment that it is necessary to develop a conceptual framework more appropriate to the analysis of the problem of the most effective utilization of the disadvantaged worker. Is it correct to assume that what unemployed disadvantaged workers need first and most is a job, or are there some conditions precedent to the job which, if fulfilled, will make for a more satisfactory long-run solution to the manner in which these individuals intersect with the world of work?

How do disadvantaged workers perceive the labor market and the manner in which they relate to it? Does this perception aid or hinder them in responding to the traditional incentives that underlie the orthodox views of the problems of effective labor market operation? Under what circumstances have they historically and do they now enter the labor market, and how many of them respond even to these circumstances? Even if they are recipients of better information about job opportunities and of training to equip them better in securing jobs, do they act upon this information and utilize the skills which they may have obtained?

In short, it can be asserted that although we now know a great deal about unemployment, we know far too little about the unemployed, how they perceive the situation in which they find themselves, and how they respond to that situation or to various "carrots and sticks" held out and applied to them. Careful studies of the effects of unemployment and underemployment on the lives of people would go a long way toward better understanding and the development of more appropriate policies. The current beginnings of public policies toward unemployment, poverty, education, and training provide interesting opportunities to make such studies which, to be effective and rewarding, must extend over time longitudinally in order to provide the kind of answers needed. In this connection, there is an urgent need to build into present and future public programs provisions for research and evaluation of the impact of the programs, with care exercised to insure that evaluation is done by persons not engaged in the operation of the programs. Perhaps the ideal situation would be one in which at the outset researchers were included in the establishment and operation of the programs in order to insure that relevant information is collected in the operation of action-directed activities, data upon which more effective evaluation could be based.

An important contribution to methodology would be the development and refinement of techniques to measure better benefits and costs of alternative programs. Most urgently needed are techniques which develop and incorporate in a meaningful way reasonable measures of *social* benefits and *social* costs, as well as their counterparts of private benefits and private costs.

Called into question also was the assumption of rational (i.e., profit-maximizing) behavior by enterpreneurs as it applies to the utilization of the supply of disadvantaged workers. To what extent does the reluctance to hire women, youths, older workers, or Negroes really maximize profits? How relevant and "objective" are the hiring criteria used by employers in measuring the capacity to perform in present openings and/or in jobs to which employees are likely to progress? Do hiring criteria bear a predictable relationship to productivity on the jobs for which they are applied in the hiring process?

A hypothesis which requires testing and evaluation is that unemployment arises primarily from personal inadequacies of the unemployed. An alternative hypothesis is that low income, not personal characteristics and inadequacies of the unemployed, is the breeding ground for unemployment and "unemployability." Studies around these hypotheses would certainly supply data about the poor and disadvantaged which are now lacking, and they should contribute substantially to understanding the supply of labor, its potentials, and its remediable difficulties.

It would also be useful to find a convenient formula for comparing educational and skill levels from different kinds of training. For instance, how should we interpret the relative educational levels of Negroes and whites with various educational backgrounds? It will not be possible to make meaningful statements about the influence of education on relative incomes unless we have better techniques for comparing real educational levels. What is needed is some kind of educational deflator.

4. *Research Concerned With Raising the Productivity of Disadvantaged Workers*

The seminar discussions revealed the belief that research on the supply of human resources should stress measures to improve the employment of various disadvantaged groups. These measures would make it possible for the disadvantaged to learn about jobs, acquire the necessary training to qualify for those jobs, be placed in positions for which they qualify, and upgrade them to the limits of their abilities once they get on the job.

There are numerous possibilities in this realm. The discussions of particular sectors of the unemployed (included in later portion of this report) contain many specific suggestions. There were, however, several kinds of research projects which would apply to all such groups.

Studies of how various disadvantaged groups learn about jobs and training programs, as well as their attitudes about various occupations, would provide much needed information about the character of employment problems and contribute to the formulation of more effective public policy.

It is striking how little many of the unemployed know about laws, rights, and availability of certain jobs. Most contacts with them, particularly Negroes, have come through civil rights leaders or middle class Negroes, whose attitudes and values may be quite different from the unemployed. The unemployed may be so suspicious of orthodox institutions and attitudes in the labor market that they cannot be reached meaningfully through them. In order to make effective contact it will be necessary to work with them in terms of their own values, perceptions, and attitudes.

Studies would be useful which indicate the extent to which achievement motivation can be most effectively transmitted to disadvantaged workers whose experience or background may have failed to furnish them with this crucial ingredient for success in an achieving society. Can this be built into education and training systems? Can special efforts be made to promote this attitude among selected minority groups through special programs to acquaint them with and train them in these skills and attitudes? Can entrepreneurial skills be transmitted through training in business administration directed specifically to selected groups of disadvantaged workers?

It would be helpful to develop techniques and methods to permit measurement of the relative rates of progress made by disadvantaged workers over time and how their positions vary over the course of the business cycle.

5. *The Older Worker*

The problem of unemployment for older workers (here defined to be those 45 years of age or older) is not per se a new one. It is one, however, about which little is known in detail. It is also one for which some better solutions are becoming increasingly imperative.

Partly the problem is one of numbers rooted in demographic characteristics of the American economy. The number of persons 45 years of age and older has risen from about 14 million in 1900 to 57 million in 1965; by 1980 there will be 66 million persons falling in this age group. Perhaps more important than absolute numbers of persons has been the rapid rise in the percentage of the workers in the labor force who are 45 years and older. In 1947, 26 per cent of the labor force was in this age group; in 1965, 38 per cent.

The nature of the problem of unemployment for the older worker needs careful focusing. Although unemployment among older workers has grown more severe in recent years, its rate of change has not been substantially greater than the rate applicable to younger workers. This is not wholly unexpected, because older employed workers have certain protections from layoffs through seniority rights and through proven competence. However, if an older worker is laid off, there is a host of problems peculiar to that age group in securing reemployment. Generally, older workers are likely to have had less formal education than their younger competitors for jobs Moreover, the formal education they have is more likely to be obsolete. Hiring standards of employers typically discriminate against older workers. As a group the older workers are less mobile geographically and therefore cannot compete effectively in labor markets beyond commuting distance. Employment patterns among older workers show disproportionately large numbers of them in older, more traditional occupations and crafts and/or in industry which, if not declining, are not growing as rapidly as those newer and fast growing industries in which jobs are available to younger workers. The available evidence indicates that when older workers become unemployed, they remain so for much longer periods than younger. Some (how many is not known) give up the search for employment and withdraw from the labor force. Older workers are more likely to have only part-time employment available to them, thus remaining in the labor force but being underutilized in the jobs they are performing.

It is in this context and within the general framework of discussions going to the question of appropriate research pertaining to disadvantaged workers that a series of research possibilities are enumerated which would apply particularly to older workers and the problems surrounding efforts to brighten employment prospects for this group of the heavily unemployed.

The greatest single need for the promotion of effective research is to develop disaggregated data on the older workers by age levels, sex, skills, occupation, race, labor market, and localities. Until this need is met, attempts to frame policy will always lack the empirical base so vital to reasonable success in these efforts. Further along this line, research to compile and establish data banks on the supply of skills currently available in the older worker category might well result in a more effective matching of existing jobs with these skills, particularly on the local level.

There is now little systematic knowledge of what happens over time to the unemployed older worker. To what extent and for what reasons does he simply withdraw from the labor force? What happens to him if he does? Why is the labor force participation rate of older Negro workers falling while that of whites is not? Information of this kind would be of immense value in making the character of the problem of unemployment among older workers more precise by allowing meaningful distinctions within this broad group.

There is also a dearth of information about the availability of valid tests to measure the potential of older workers. A series of research problems could be blocked out in this area. There is need to know the extent and magnitude of discrimination against older workers in the hiring and work process. Testing procedures currently being used in the hiring process need evaluation with regard to whether they do indeed measure the ability of the older worker to perform the job. There are some growing suspicions that the standards used by employers bear little relationship to potential effectiveness on the job.

There is also limited information available to indicate the extent to which and under what circumstances an older worker can be trained. What has been the experience with retrained older workers when they have been placed in jobs? Are there special techniques of training for older workers? Are they really more costly or less effective than those used for younger workers? When is redesign of jobs more efficient than "redesign" of older workers?

In the case of the aged portion of the population, there is a place for studies of the circumstances under which those who wish to work can be incorporated into the work situation. Does paid service in community work offer a peculiar outlet for persons who are past retirement but wish to derive the satisfaction of participating in community activities? If so, what particular kinds of occupations or skills hold the most promise in this direction?

6. *Youth*

The nature of unemployment problems among younger workers should be given close consideration. Several facts and groups of facts are important. Because of rising school enrollment rates, the entry age of young workers into the labor force has shown a long-run increase. The proportion of teenagers in the labor force has gradually fallen. Coincident with the falling labor force participation rates among teenagers has been very high unemployment rates among these young workers. (13.6 per cent in 1965 as compared to 4.5 per cent for the labor force as a whole) The explanation of this seeming paradox lies in the very substantial increase in the absolute numbers of teenage products of the post-war boom. During 1965, for example, 550,000 teenagers entered the civilian labor force, three times the average of the preceding four years. Teenagers accounted for almost 40 per cent of the total increase in the size of the labor force between 1964 and 1965. And the number of young workers entering the labor force is expected to increase throughout the 1960's. Like most averages, however, the over-all unemployment rate of 13.6 per cent among teenage workers masks many vital aspects of the problem of unemployment. In absolute numbers in 1965 there were 1,143,000 young people 16 to 21 years of age without jobs, or 33 per cent of all the unemployed workers in the United States. In 1964 nearly 350,000 young men under the age of 25 were neither in school nor in the labor force. They were not attempting to find jobs, so they were not included either in labor force data or in unemployment figures.

The high level of economic activity in 1965 and the beginnings of specific programs designed to assist young people in securing jobs made inroads on unemployment among young workers. Between 1964 and 1965, unemployment rates fell among all categories of young workers. The following table summarizes these changes:

Unemployment Rates by Age, Color, Sex
1964 and 1965

	1964	1965
All persons		
Men, 14 years and over	4.7	4.0
Men, 14-19 years	14.5	13.1
Women, 14 years and over	6.2	5.5
Women, 14-19 years	15.0	14.3
Non-white		
Men, 14 years and over	9.1	7.6
Men, 14-19 years	23.3	22.6
Women, 14 years and over	10.8	9.3
Women, 14-19 years	30.6	29.8

Despite these improvements in employment, there can be no question that unemployment rests disproportionately on the younger portion of the labor force. The teenage unemployment rate in 1965 remained high (though it had fallen moderately) and was still almost three times the rate for the labor force as a whole. There has been virtually no change in unemployment rates among non-white teenagers, despite the quickening of economic activity. Almost one of every three non-white teenagers was out of work in 1965. And shocking as these data are, they do not tell the full story. Eight per cent of all out-of-school white male youths were not looking for work; among non-whites those not in the labor force constituted 12 per cent of all out-of-school male youths. Among girls the percentage was even higher (44 per cent).

Young people without jobs are not typically new workers. In 1963 two-thirds of the young men and over one half of the young women unemployed had previously held full-time employment. Job changing is a pervasive phenomenon among young workers, but there is real question whether this kind of behavior is informed or rational; much of it is clearly wasteful.

Data are beginning to be collected which at the national level show the vital link between education and employment. In 1963, the rate of unemployment among young men who had not completed high school was 28 per cent, nearly twice that of high school graduates. And the periods of unemployment were of longer duration among dropouts, who, when they found employment, typically took lower paying jobs requiring less skills. Dropouts also had much more limited access to information about jobs; they apparently learned about jobs principally through friends. The relationship between education and income level was pronounced, dropouts receiving average incomes substantially less than high school graduates.

If past trends continue into the future, the fast-growing sector of the labor market will be in white collar and service occupations. However, these have not typically been ports of entry for young men. Employment in blue collar occupations which historically have furnished employment outlets for the unskilled and semi-skilled is expected to grow much more slowly and perhaps even decline.

The growing numbers of young workers in the labor force, the changing character of technology and its impact on industries and occupations, and the declining importance of blue collar employment all focus on the vital importance of education and training of young workers. There is need to appraise and evaluate the educational system in the light of these changes, past and anticipated, and to ascertain precisely how effectively it is operating to prepare young workers for the work experience.

Perhaps the most discernible strand running through the discussion of employment of young workers was the lack of information about the character, extent, and causes of unemployment among young workers, particularly at the level of the locality and community attempting to deal more effectively with the problems. Data are not sufficiently disaggregated by age, rate, sex, education, skill, and occupations. The development of such data is a prime need, underpinning the researchability of many other significant questions.

There can be no question of the importance of establishing precisely the relationship between education and employment, particularly for purposes of devising reasonably effective programs to deal with the problems of young workers and for those children who will shortly become workers.

Too little is known about the effectiveness of various high school educational programs in preparing young people for work. Despite the critical examination to which the American high school has been subjected in the post-Sputnik era and in the period of growing concern with poverty, there remain serious deficiencies in the development of curricula and techniques to deal with the problems of a large number of students who are neither college-bound nor qualified for admission to vocational education programs.

There is much evidence to support the growing contention that the educational system is too aristocratic, geared to the needs, aspirations, and goals of the "winners" in society, to those whose values, resources, and experiences point them in the direction of occupations, skills, and career objectives which are acceptable and encouraged. For the high school student who for various reasons falls short of acceptable and recognized standards, the view of the road ahead is blurred and indistinct, and the obstacles appear formidable. The schools have not found reasonable answers to the problems of these students, who fail to fit the conventional standards of the school system; the result for such students is either discouragement and dropping out or consignment to an ambiguous status as a general curriculum student. If the former route of drop-out is followed, the chances of long-run unemployment or episodic employment are now well established. If the latter route of general curriculum is pursued, the student may emerge both minimally trained in the basic social skills and untrained in any meaningful vocational or occupational skills. This commits him at best to low level jobs and renders him vulnerable to layoffs when the economy sags or when technology displaces him.

The major challenge to the high school is to find better solutions to the problems of the "losers," those students who are in limbo in the present curriculum. Vocational and comprehensive high schools have been preoccupied with meeting the needs of industry, unions, employers, school boards, parents, etc. at the expense of developing ways of dealing with, or having much interest in, the needs of the students who do not fit conventional categories of college preparatory or vocational education. Even the latter has developed over time, perhaps in a quest for more "respectability," a set of criteria which removes vocational education from the choices available to many students, particularly those who are "disadvantaged," for all the familiar reasons.

There was a strong consensus that a serious and pressing need exists for research and experimentation dealing with the "forgotten 40 per cent" of high school students, those whose interests and direction are imprecise and who are included in low level "occupationally oriented" vocational education programs or in general curriculum studies. This is an undertaking of major proportions with several component parts, each of which is significant of itself but clearly related to the problem of developing a coordinated and thorough-going *program* directed at the disadvantaged.

Such a program would involve at least the following major elements:

a. Finding ways of effectively communicating with the young people who presently view schooling as a rather meaningless experience.

b. A hard look at counseling and its effects on labor market experience of young workers. How does counseling affect the supply and utilization of human resources? More particularly, how does it influence the flow of people into certain kinds of jobs, occupations, decision-making, and career patterns? Where do counselors get their information, and how good is it for the present state of the labor market and for the future pattern of employment?

c. The methods by which the school system can be made more responsive to the needs of disadvantaged youth. At present comprehensive high schools are apprehensive of losing accreditation if they accept industrial arts courses and other curriculum changes which might better meet the needs of many young people. Moreover, school boards often set educational goals which are inconsistent with a fuller program for the noncollege bound youth.

d. Methods by which the supply of teachers with the necessary skill and training in dealing with disadvantaged youth might be increased. Some of the best teachers for these purposes might well be people who cannot be certified under present laws, either because they are not college graduates or because their college work does not qualify them for accreditation.

e. Methods by which the supply of teachers, particularly able teachers, for deprived schools and areas could be increased. The most obvious possibility would be to pay teachers in these schools premium salaries. The premium might be financed through government grants.

f. Devising ways of building better bridges between the schools and industry in order that the needs of industry are better understood by the school system and also that the strengths and limitations of the schools in training students are better understood by employers. This would include exchanges of specific information and would serve to educate both school systems and employers about the nature of the job market locally, regionally, and nationally.

g. Ascertaining in detail what kinds of reforms in curriculum and courses are necessary for the "forgotten 40 per cent". Considerable work could be accomplished by (a) teaching the students remedial skills; (b) upgrading the weak courses to include elementary mathematics, physics, chemistry, and English; (c) providing more adequate counseling services for the people who are undecided about future plans; (d) achieving better coordination among industry, unions, schools, and the student in his training, instruction, and employment; and (e) teaching vocational courses on a level that would allow students to master the broad fundamentals rather than specific skills.

General dissatisfaction can be expressed with the state of our knowledge about the "life cycle of work experiences" among young workers. Too little is known about the actual process by which young workers enter the labor market, their experiences once in the labor market, and their entire perception of the labor market. Cohort studies or cross sectional studies at different age levels hold some promise as techniques for acquiring better information in depth which would identify specific kinds of obstacles, incentives, sources of discouragement and success.

Some notion of differentials in access to different industry structures might be obtained from studies of the way in which workers are recruited in a series of industries where there are different patterns of entry. How a youth moves in the labor force is influenced by his own position in the socioeconomic structure and the opportunities he seeks for himself. Why is it that a youth cannot use a youth work program in the same way as he might use his parents in gaining access to the job market? How does a program succeed in placing some youths and not others? Is the difference attributable to personal characteristics or to other factors? If it is attributable to personal characteristics, what are those found in the persistent failures? To what extent are these characteristics institutionally and environmentally induced? What kinds of work experiences are most important in influencing the attitudes of young workers? What is the reaction of administrators and the immediate boss to disadvantaged youths? To what extent is it necessary to train supervisors in how to deal with disadvantaged youths? To what extent does legislation designed to protect young workers act as a bar to their employment?

7. *Socio-psychological Studies of Work Experience of Youth*

The entire field of economic dependency and its effects on the attitudes of young people urgently needs study and research. What are the cultural agents through which youths acquire their attitudes and expectations with regard to occupations? How do these cultural agents actually function to create certain predispositions toward certain occupations? What is it that young workers are looking for in the job situation? What are their attitudes toward work, money, and the future? What is there in the course of individual development and personality structure that is either functional or disfunctional for the production of various capabilities that are valued in the labor market? To what extent and under what circumstances does work stimulate the desire for education? Why is it that certain groups resist the assistance of the anti-poverty program? These are all important questions which at present would probably best be pursued at the local level in a variety of communities.

We have not tapped sufficiently some potentially valuable sources of information. Historical studies and evaluation of past programs dealing with youths—the Civilian Conservation Corps, the various military experiences—could be helpful in furnishing clues for the present. Comparative studies of programs in other countries would provide further information based on experience elsewhere.

8. *Women Workers*

The improvement of the status of women has been called one of America's ten contributions to civilization. One reflection of this change in status is the role now played by women in the labor force. One out of every three women (14 years and over) is now in the labor force, as compared to one out of four in 1940. Women workers constitute more than one-third of the total labor force. The more than twenty six million women in the labor force in 1965 exceeded by more than six million the number of women working during World War II. The proportion of women over forty-five years of age in the labor force has more than doubled since 1920, the median age of women workers now being over forty years of age. More than one-half of all women workers are married, and nearly one-third of all married women are working presently. While the labor force participation rate for married women is increasing, it is lower than that for single women or for women who are widowed, divorced, or separated. About 35 per cent of the women in the labor force in 1961 had children under the age of eighteen. About one-fourth of all women workers are employed as clerical workers, one-sixth as operatives, and one-sixth as service workers. The greater a woman's education, the more likely she is to be in the labor force. The proportion of college educated women employed in the labor force (57 per cent) is much higher than that for women with less education (41 per cent).

The median income for women workers is only about one-third that of men. In every occupation and in every industry classification women receive less than men. Women doing part-time work make about 80 per cent of the salary of men also working part-time.

Certainly one explanation for the growing number of women in the labor force has been the rapid expansion of those sectors of the economy and those occupations to which the skills of the woman worker can be applied. The growth of clerical and sales occupations, service industries, teaching, and white collar work in general has been dramatic during the last generation.

Yet at the same time that this "revolution" involving the increased work opportunities for women has proceeded, it is also apparent that in the United States there is an immense waste of human resources because of the failure to utilize fully the reservoir of womanpower. Although women have played an important role in that part of the labor force classified as professional and technical, for example, their employment is disproportionately concentrated in activities such as elementary and secondary education, nursing, library work, and social work. They are not substantially represented in great numbers in the more highly skilled (and highly paid) professions such as university teaching, medicine, law, and the sciences in general.

One of the most serious deficiencies pertaining to women as a component of the supply of human resources is the lack of reliable data about women workers disaggregated by occupation, skill, race, and marital status at the level of the locality, the community, region, and labor market. Badly needed are rosters (inventories) of available, trained women workers, especially for the more highly skilled fields such as the professions.

Lacking also are reasonably precise measures of the economic and social losses arising from the underutilization of women. Full-time earnings of women are about 60 per cent of those of men, and the differential has been widening. Why is this so, especially in light of the fact that women average about one-half year more education than men? What is the extent and nature of unequal pay for equal work? Why has the percentage of M.A.'s going to women declined from about 40 to 30 per cent since 1940? Why has the percentage of Ph.D.'s going to women fallen from about 15 to 11 per cent since 1940? What are the attitudes of faculty, advisors, and counselors toward advanced degrees for women? Why are the proportions of women in teaching and educational administration declining? What are the admissions policies regarding women entering colleges and professional schools? Why are less women in public service than formerly?

Also lacking are reliable data on the reserve of female human resources *not* in the labor force. Who are they, and what skills do they possess? To what extent does the absence from the labor force reflect discouragement and apprehension by women who may truly wish to work but do not seek employment for various reasons? What are these reasons? To what extent and under what circumstances would women enter the labor force if opportunities existed? What is their perception of the labor market and their place within it? How might modifications of work schedules to accommodate women increase their labor force participation rate and improve their utilization? What would be the costs associated with such adaptations? What union attitudes affect women's participation and utilization?

Not enough is known about actual industry practices with respect to women. What is the incidence or existence of "women's jobs" as opposed to "men's jobs?" To what extent are seniority practices used to reinforce these distinctions? What are the effects of the specification of women's jobs by seniority and other systems or mores? Why are so few women in managerial and professional occupations? For what reasons and under what circumstance are women effective or ineffective as supervisors?

There is a rich field for research regarding the relationship between protective legislation and fuller utilization of female workers. To what extent, if at all, does protective legislation affect the equal opportunity for women, and to what extent can it be or is it being used to defeat the purposes of equal opportunity? What are the factors responsible for the lack of legislation in certain areas? To what extent are these taboos a product of pressure emanating from those who would seemingly benefit from such legislation? What are the factors which shape women's attitudes toward their "place in society," and how do these relate to reality and to the potential utilization of women workers?

9. *The Negro Worker*

Fifty-four per cent of all American Negroes live in the South. Another 31 per cent live in the twenty-five largest cities in the country. These figures illustrate the essence of the "Negro problem," as far as convergence potential of existing white-nonwhite standard of living differentials is concerned. Out-migration from the South will continue to increase the proportion living in urban cores. At the same time, white migration from central city to suburb has resulted in a trend toward all nonwhite central city enclaves surrounded by all white perimeters. The significance of these migration patterns for education and employment now and in the future is a critical problem which must be faced.

The continuing growth of the U. S. economy provides the best possible source of data for empirical tests of the "aggregate demand" and "structural" hypotheses formulated to explain the intolerably high rates of Negro unemployment. Prior analyses have borne out the validity of the "last hired, first fired" thesis as a characteristic of Negro experience in previous post-World War II growth cycles. Given the dynamic nature of the legal framework within which the Negro lives, it is necessary to undertake longitudinal studies in specific labor market areas to assess the significance of recent changes on actual behavioral characteristics. This will require intensive study of both supply and demand components.

It is clear that the present occupational distribution of Negroes will work against future employment gains for the Negro in traditional occupations. Nonwhites are less than proportionately represented in the relatively rapidly growing professional, managerial, technical, clerical, sales, and craft fields. Conversely, nonwhites are overrepresented in the semiskilled and nonfarm labor blue collar areas. The one bright spot is the nonhousehold service sector, in which significant gains have already been made. Studies must be undertaken to separate the supply and demand factors which are operative here. The literature on the economics of discrimination has thus far concentrated on comparative measurement, e.g., white-nonwhite differentials in earnings, occupational and industrial distribution, and mobility characteristics. Increased attention must now be devoted to the reasons for existing differentials in individual cases. If public policy is to be oriented toward the elimination of "invidious differentials" based on skin color alone, a methodology must be developed to determine which factors are operative in specific instances. It is not useful, for instance, to indict all labor unions for the discriminatory practices of a few. It is more important, perhaps, to assure the requisite training and motivation among Negro youth to seek careers in recently diversified areas of opportunity. The provision of accurate, up-to-date labor market information is therefore crucial. Employers need to be supplied with information about available, qualified Negroes; and Negroes must be made aware of the realities of today's opportunities for the use of their skills and talents.

Research pertaining to the education of Negroes is particularly imperative. It is necessary to establish more precisely the ways in which deficient training for Negro students is built into the existing system and the reasons for its persistence. In the present situation in which racial barriers are being reduced, what is the today's educational system doing to overcome the deficiencies of the Negro urban core residents? What are the urgently needed steps to be taken to speed this process? What are the educational differences to be found in the South and the training being received by rural southern residents? To what extent is the educational problem one of developing and training teachers who are sufficiently cognizant of the aspirations, values, and apprehensions of young Negroes to be able to communicate effectively with them in a way to provide an understanding of the relationship between education and employment and income? It is important to develop research designed to break the vicious circle in which students drop out of school because they see no relationship between school and the job, but who, once out of school, can find no jobs because they are dropouts. Are there techniques for effectively breaking this circle by talking about "rewards" from education which are understandable to both the Negro student and the dropout? There seems to be a growing sentiment that the entire field of counseling is one deserving close study. How does counseling really work now, and what is its impact on the flow of human resources into jobs? Where do counselors get their information about employment opportunities, and how good is this information? What are the most effective counseling techniques? Are they included in curricula designed to train counselors?

We presently know relatively little about the actual employment experiences of Negroes. Far too little is known about how the Negro learns about the existence of a job, how he trains himself for it, and how he secures and holds the job once he is employed. There are insufficient data, particularly at the local level, indicating where Negroes are now employed and where the breakthroughs are being made. Are these real or nominal breakthroughs? What kind of tactics and strategies are available to convert tokenism into real penetration? To what extent are tests and hiring standards acting as unwarranted barriers to entry? To what extent is screening by educational levels turning a "democratic" test for entry into one perpetuating discrimination against Negroes? Badly needed are more studies of the performance of Negroes on the job, ideally industry-by-industry or occupation-by-occupation. Without such studies the myths of the past will surely remain as powerful blockades to broadened employment opportunities. Why have Negroes moved up in some industries and not in others? What roles do seniority systems play? Is it related to Negro participation in labor organizations in certain industries? Is technological innovation involving greater than proportional displacement of Negro workers?

3

THE DEMAND FOR HUMAN RESOURCES

The subject of the demand for human resources may be divided into the two general areas of "present" and "anticipated" demand for knowledge and skills. Such demands are usually, but probably inadequately, characterized by occupational titles which are often closely associated with specific industries.

The assessment of present demand is important mainly for the contribution it can make to a more efficient functioning of markets for human resources, particularly through the provision of essential knowledge of job vacancies. The assessment of anticipated demand, insofar as this is soundly conceived and developed, has significant implications for investments in human resources.

If it is possible, with reasonable assurance, to anticipate the relative demands for knowledge and skills five, ten or fifteen years hence, appropriate investments in the generation of needed knowledge and skills can be made more efficiently. The production of needed knowledge and skills often requires considerable lead time for the planning and financing of programs, the building of facilities and, especially, the development of the human capabilities needed to administer and conduct (teach) new programs of investment in human resources.

If reliable estimates of future needs are available, choices among alternative systems for investing in human resources can be made more rationally, as can choices among various programs *within* any type of educational system.[1] However, if reliable estimates of future needs are *not* possible, at least in sufficient detail to guide investment decisions along occupational lines, then this, too, has great significance for educational systems. Viewed over-all, inability to anticipate needs by occupation would argue very strongly for great emphasis by the educational systems on fundamental education, upon which specific occupational skills could more easily be built by employers in response to their particular changing needs. This contrasts with training which is oriented mainly toward specific occupations.

It should be noted, however, that the specific training for many of the highly skilled occupations is broadly based because of the nature of these occupations. Training in many important occupations is largely training in fundamental, flexible skills which lend themselves easily to continual application to specific needs in response to new developments and changing job requirements. Examples include many of the health professions, teaching, and most of the highly skilled crafts such as tool and die maker, pattern maker, and machinist.

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[1] The term "educational system" is used to represent *all* means for developing human resources and not solely traditional or "formal" education.

In addition, there are other important groups of occupations for which there is no important conflict between specific and general training. Generally these occupations have low skill levels or require general literacy, social skills, or other skills for which general rather than specific education is much more relevant. Examples include low-skilled (in the specific sense) occupations such as many of those found in food services, custodial, retail, low-level clerical, and unskilled and most "semi-skilled" production positions. Such jobs, although they may well decline in importance relative to other more highly or more specifically skilled occupations, will surely continue to constitute very significant proportions of the demand for human resources for the foreseeable future. Useful research could be done on estimating the present and anticipated relative importance of such occupations.

The above points strongly suggest that investments in persons with low levels of aptitude or aspiration might better emphasize fundamental and citizenship training than specific occupational content, whether or not reliable estimates of future demand by occupations are possible.

1. *Present Demand*

There is very little knowledge, of the sort that would be useful for educational systems, about how employers, in the private or in the public sector, meet their present needs for human resources. We do not know nearly enough about employer hiring policies and practices. How closely related are employers' "ideal" hiring standards to the actual or potential job requirements, to the requirements of jobs to which the employees are likely to progress (often by seniority), to the qualifications and performance of present employees, to the tightness of the relevant labor markets, etc.? Are hiring standards realistic, or are they largely bound by conventions?

Another important area for research concerns the extent to and techniques by which employers influence, or seek to influence, investments in human resources, based on their present demands. What do employers themselves do to upgrade their work forces, that is, what is the nature and cost-benefit relationship of their investments in their present human resources? What are the criteria, institutional arrangements, and mechanisms for the *internal* satisfaction of demand, i.e., relevance of seniority systems, union pressures, etc.? How do employers relate their needs to *external* educational systems? What are these cost-benefit relationships? What bridges exist, and with what effectiveness, between employers' needs and educational institutions? How are these bridges designed, built, and maintained?

Do certain types of employers prefer to hire people with stronger general education rather than specific training? For what jobs and for what reasons? Does this preference depend on such factors as the type of industry or their growth rates? How does the preference, and/or the reality, shift in response to changing labor market conditions?

A meaningful approach to gaining new knowledge on these and related questions might be to seek profiles of "best practices" of employers in various industries, rather than to attempt across-the-board analyses. The public sector, which is an increasingly important employer, should be prominently represented among those industries studied. Special attention should be paid to the real growth industries such as education, health services, and personal services rather than the relatively declining manufacturing sector which has been emphasized in the past.

With respect to the problems of the disadvantaged, relatively little is known about relating programs for increasing their preparation for employment to employers' minimum port-of-entry requirements. For example, in what respects do employers reduce hiring standards in tight labor markets? Does employer behavior offer a guide as to what investments in the disadvantaged will be most productive in terms of job opportunities? Under what circumstances and for what reasons do employers raise or lower hiring standards? What implications do these changes have for investments in human resources, and especially in the disadvantaged?

There seems to be very little easily available quantitative information on present demand for specific occupations at any levels between the local employment office and nationwide estimates. There may be considerable need for registers of job openings for those geographic areas which are most relevant for particular occupations. Multi-county, state, and regional registers of current demand might contribute greatly to a better functioning of markets for human resources.

Little is known about those elements which are common and those which are distinctive among occupations. The identification of common elements might facilitate occupational and inter-industry mobility and might also facilitate more efficient investments in human resources. New occupational definitions could also greatly facilitate the relating of projections of future demand to investments in human resources.

2. *Anticipated Demand*

A. *Difficulties*

The subject of the estimation of future demand for human resources is characterized by controversy. Critics of efforts in this area consider them quixotic for at least two reasons: (1) the great difficulty (inability?) to make significant estimates and, (2) the lack of need for estimates, even if it should prove possible to make good ones.

In addition to complex definitional, methodological, and statistical problems, the estimation of future demand is fraught with conceptual difficulties which may render largely indeterminate the parameters of the task. Among these are the impact of exogenous developments in technology, discoveries of new natural resources, national and international political developments, natural catastrophes, the vagaries of consumer preferences, and the effects of future wage differentials and changes in them on the development, substitution, and utilization of human resources. Some critics contend that efforts to develop and use detailed human resources demand estimates must imply over-all control of the economy, for without such control the influences of exogenous variables will render such estimates useless.

In addition, there is little useful historical information to guide the formulation of estimates of future demand. For example, technical coefficients of human resources in either present or historic production functions have not been identified. If we do not know where we have been or where we are, in terms of human resources inputs related to technological change, levels of output, shifts in sector outputs, changes in factor prices, etc., how can we make useful estimates of future human resources needs when the relevant parameters—the *facts* of the present and the past—can only be guessed at for the future?

Even if these conceptual and operational difficulties can be overcome and sound estimates made, critics question their usefulness. They argue, for example, that the margins of error of occupational estimates of sufficient detail to be useful for educational planning are probably greater than any inadequacies resulting from the automatic adjustments of the human resources aspects of our economy. They contend that, especially in such a rich, mobile, growing, and diverse economy such as ours, the "invisible hand" will guide individual and institutional decisions along appropriate lines. The market mechanisms are efficient enough not only to respond to, but also to anticipate, human resources needs.

Demand for human resources is a derived demand, that is, it is dependent on, among other things, general levels of output of the entire economy and on the demands for specific goods and services. It is not possible, say the critics, to predict with any certainty what our future levels of over-all output, specific demand, or our average rate of economic growth will be. It is not possible to predict our future levels of employment or unemployment nor our future levels of efficiency in the utilization of human resources. Estimates of demand for human resources will require assumptions on these and other parameters of such heroic proportions as to render the estimates themselves meaningless.

Critics further contend that attempts in other countries to use sophisticated procedures for estimating future demand for human resources have not been successful and that nations that have actually tried to plan their educational programs in terms of specific manpower needs have usually been driven to a type of "seat-of-the-pants" forecasting which provides usable results only for certain high-level occupations.

Critics embrace the "aggregate demand" rather than the "structuralist" arguments in urging that, except for a few specific problems of hard-core unemployment, the provisions for future needs for human resources will evolve naturally in an economy characterized by high levels of aggregate demand because of the great flexibility of our labor force and the responsiveness of individuals and institutions to needs. They contend that this will render insignificant any over-all attempts to identify and plan provisions for future, specific human resources needs. They cite the already immense investments in knowledge and skills, often of a fundamental and flexible nature, which provide for easy adaptation of our labor force to changing needs, either by individual, employer, or public initiative.

However, despite all of the conceptual problems and practical difficulties, the estimation of future demand for human resources is an area of sufficient potential value that it warrants greater research emphasis, including basic research on historical trends and on methodologies for making projections.

B. *Purpose of Projections*

The main purpose of projections of the demand for human resources is to provide information which will help both individuals and educational systems to make decisions and investments in terms of future needs. Estimates of future demand should help individuals and educational systems improve their choices among alternatives. A useful focus for the discussion of research related to anticipated demand is the relevance of the knowledge sought for the efficient investment in human resources. Throughout this discussion the pursuit of levels of quantitative precision which are neither attainable nor necessary should be avoided. The determination of *directions of change* and, if possible, of orders of magnitude of anticipated changes, are far more important than are "exact" numbers.

C. *Time Periods*

While it may be ridiculous to attempt to project narrow occupational needs for fifteen years, it is ridiculous *not* to attempt to project *some* human resources needs for fifteen years. The appropriateness of time periods covered by projections should depend on the necessary lead time for modifying the projection of the particular occupations considered and on the ability to devise grouping or clusters of knowledge and skills which are more appropriate than are present occupational definitions.

D. *Geographic Scope*

There is great need for studies of demand (and of the other subject matter areas) on subnational levels. For better or for worse there are now some national projections of demand, but there are very few such estimates for local, multi-county, state, and regional areas. It is quite evident that national projections by themselves, even if very accurate, have little usefulness at the levels where most decisions are made concerning investments in human resources, that is, by local school districts, state public education departments, and by employers and individuals. It is necessary to develop methodologies for obtaining information which will relate the occupations under consideration to the geographic areas which are most appropriate to those occupations in terms of investment and of labor markets. For greatest usefulness such projections must be made on the same geographical basis as are the investment and market decisions. Therefore, an understanding of the educational decision-making processes and of the mobility and market patterns by occupation must be included in the design of projections.

One approach is for local areas to modify national projections to reflect local circumstances. However, it is difficult to assess the relative advantages and disadvantages of this approach as against, for example, encouraging standard local projections which could be added together to obtain estimates for wider geographic areas. Eventually these could be compared with national estimates formulated by macro, rather than micro, techniques. It seems certain that both national and subnational projections have important uses. For any given need all available projection may have relevance, although with different weights.

E. *Disaggregation by Occupations*

Detailed occupational projections are more meaningful and more possible the shorter the time period and the lower the skill level considered. For longer time periods and higher skill and lead-time levels, broader groupings of occupations, or clusters of skills, should be identified which can be translated effectively into educational programs.

The greatest need for long-term projections is for highly skilled fields requiring heavy investments and long lead-times. It is likely, however, that the essential skills of most of these high-level occupations are of sufficient generality and flexibility that educational planning need not concern itself unduly with anticipating detailed vocational requirements for the future.

Too little is known about the transferability and adaptability of skills, that is, the flexibility of past and present patterns of training for rapidly changing needs. To what extent must employers replace present skills with other (new) skills, as is the case with the replacement of machinery by very different machines which perform more and different functions?

Heavy emphasis should be given to *newly emerging* occupations of importance. Research should be conducted on the establishment of "early warning systems" to alert educational systems to the emergence of occupational demands which will grow to great significance in the future.

F. *The Disadvantaged*

To date most of the best demand projections here and abroad have centered on certain very important high-level professions such as that of scientist, doctor, engineer, and teacher. Little attention has been given to anticipated demand (and how it might be increased) for the disadvantaged, including the unskilled. Little is known, for example, about how demand for unskilled workers may relate to economic growth. Will the expected evolution of our economy and society increase or decrease the relative demand for the unskilled and for those jobs with very low educational or training requirements?

G. *Sources of Information*

There are at least two major approaches to estimating demand, the macro and the micro. Unfortunately, there is no systematic assessment of the relative merits of each approach or of combinations of them. The macro approach can modify straight line projections of national trends to reflect anticipated influence of economic growth, employment levels, changes in technology, and in patterns of demand for goods and services, etc.

The micro approach is generally based on establishment surveys—information obtained from employers. There are many shortcomings in relying on employer opinion to formulate demand estimates. However, the skillful analysis of employers' information and opinions can improve independently determined estimates even though employers may be of little help in formulating these estimates initially. Skilled analysts could determine, through experience, the precise sorts of information from employers which are most relevant to the refinement of their estimates. They could continually improve their search for those employer developments which will most influence future demand for human resources. They can probably, through employer responses, identify, for example, trends and technology which will affect future requirements. They may be able to develop an "early warning system." The most important changes in technology, tastes, markets, etc. are usually identifiable before they attain great significance, if we can develop effective search and appraisal techniques.

Establishment surveys should pay particular attention to the sectors of highest growth potential, for example, government, health services, education, etc. Special attention should be given to the demand prospects related to small employers and to individual entrepreneurial opportunities.

Other promising sources of information include employer, trade, and professional organizations which often have good records on changes in demand wages, mobility, etc. of their members. This resource has been only lightly exploited.

H. *Replacement Needs*

It is clear that replacement needs in many occupations will be quantitatively at least as important as incremental needs. Knowledge of age structure, retirement and death rates, and labor force participation rates for various groups gives some reliable information on the outflows from many occupations. More careful analysis of replacement needs should improve the ability to estimate over-all future demand.

I. *Demand Related to Specific Programs*

Regardless of the feasibility of more comprehensive estimates of demand, we are usually confronted with an array of specific public (and private) programs, already planned or even initiated, which have great significance for human resources demand but about which little is known. For example, the Medicare program will increase demand for many types of health service personnel, but there seem to be no systematic studies to assess the opportunities that this, or other major programs, presents for educational systems.

The relative payoff of such research should be very high in terms of influence on decision makers. The methodologies should be simplified by virtue of the fact that the planning and acceptance of such programs usually involve detailed costing and budgeting. Human resources content might be relatively easily related to the costing work already done and should be included in the costing work of future programs.

J. *The Tightening of Markets for Human Resources*

There is need to examine the implications for research of shifts from an under-employment to a full employment economy, and vice versa. For example, with tightening labor markets employers may be willing to assume responsibilities and costs for investments in training and retraining which, at higher levels of unemployment, were considered public responsibilities. The *nature* of demand and of investments to satisfy it, by either the private or the public sector, may change significantly with changes in employment levels. A full employment situation may require a very different ordering of research priorities than does an underemployed economy. Nevertheless, even in tight labor markets employers probably train only the most trainable, rather than those most in need of training or retraining.

4

INVESTMENTS IN HUMAN RESOURCES

In considering this area in order to suggest priorities for research it is important to emphasize again that the concern here is with *all* significant means or institutions whereby investments are made in developing or upgrading the potential productive contribution of human beings to society. The traditional or "formal" educational system is surely the most important of these educational systems, and the one most susceptible to measurement, but it is certainly not the only system for making significant investments in human resources. Others include on-the-job training, private and public training and retraining programs, self education, apprenticeship, and special programs to meet the needs of the disadvantaged, such as the Job Corps.

The orientation in this report is toward investments in human resources as they relate to the development of productive knowledge and skills, that is, the economic consequences of such investments in identifiable terms. This in no way implies that investments to increase human knowledge and skills are made *solely* to develop the capacities of human beings as producers of goods and services. Educational investments in human beings have many non-economic goals, but educational investments are also the means for increasing the potential of human beings as producers. Education is, therefore, among many other things, the sole means to develop human resources.

This discussion will treat, in turn, the following areas. Overlapping is unavoidable.

a. The ability to appraise the effectiveness of present institutions for developing human resources in terms, for example, of the quantity and quality of their outputs and their responsiveness to change.

b. How are investment decisions made? What criteria are used in decision making, and by whom? What tests are available of the efficiency of current decision making?

c. How are broad national programs implemented at the local level? What inefficiencies and misallocations result from the translation process?

d. How is it possible to evaluate the economic decision-making criteria? For example, what are the rates of return on alternate investments; and what are the limitations of such approaches?

- i. How adequate are the tools of analysis, e.g., cost-benefit techniques? What research would improve the analytic tools?
- ii. How and why are present data inadequate? How does the inadequacy of data relate to current decision making?

e. How could more rational criteria be better integrated into the decision-making processes?

1. *What is the Effectiveness of Present Institutions?*

There is too little useful information, either quantitative or qualitative, on past or present output of educational systems. We do not even have detailed information, by training specialty, on present output of public education, even in advanced states. There is little basis for estimating the *quality* of investments in human resources or for comparing the quality of the 30,000 school districts[1] or of various types of investment in human resources.

The major problem in assessing the effectiveness of investments in human resources is to establish better means for measuring the economic effects of these investments. Little is known about the "value added" by education or about how to measure it. Perhaps the most meaningful approach is to try to isolate the effect of education on streams of earnings. However, this approach is fraught with conceptual and practical difficulties. There may be other valid, or even more valid, measures of the efficiency of investments in human resources. The interactions among earnings, investments, IQ's, motivations, social background factors, etc. make the isolation of the investment effects on earnings very difficult. Accurate data on earnings are costly and not easily obtainable.

It seems necessary to develop methods to assess and compare the viability, or responsiveness to change, of alternative systems of education or of alternative programs within any given system.

2. *How Are Investment Decisions Made?*

Very little is known about how decisions on investment in human resources are made at the various levels. There are no systematic appraisals of the criteria, the major constraints, or who makes what kinds of decisions at what levels.

It is clear that explicit economic considerations, especially from the standpoint of cost-benefit analysis of alternative means of investment in human resources, play little part in the decision-making processes. However, some major educational decisions, such as the great movement to consolidated schools, had economic, as well as other, motivations. Nevertheless, few attempts to measure the economic consequences, *ex post,* have been made. Knowledge of the economic consequences of major past decisions could contribute much to the virgin field of examining the economic consequences of alternative courses of action, *ex ante.*

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[1] A cutoff of 6,000 enrollees leaves 600 school districts, encompassing two-thirds of total enrollment.

It is clear that political pressures and considerations play the major role in much of educational decision making, for example, decisions on locating new schools or state supported colleges. Although economists do not have appropriate tools to analyze this major aspect of decision making, per se, economists can assess the economic consequences of various political decisions. These analyses may, then, influence the choice of alternatives, especialy as economists are able to demonstrate to decision makers and to the public the (economic) usefulness of their work. Although decision makers at first will probably reject any economic analysis which does not support already (politically) determined decisions, as the demonstrated competence of economists grows and is publicized in this area it will be increasingly difficult for decision makers to avoid serious consideration of the economic aspects of their decisions.

Few tests ever seem to have been applied to determine the efficiency (economic rationality) of past or present decision making. Cost-benefit, operations research, and systems analysis techniques could offer a great deal of help in this matter. What feedback mechanisms exist, and how effective are they? Useful comparative studies might be made of decision making in states which have, and those which have not, established coordinating boards.

It is not known to what extent and with what results any explicit human resources demand projections are used in decision making. Nor is it known the extent to which and how employers influence decision-making and thereby might introduce implicit demand considerations.

3. *How Are National Programs Implemented at the Local Level?*

The concern here is with the efficiency of the translation processes. Clear determinations of the different objectives of authorities and programs at federal, state, and local levels are needed before we can intelligently explore this area.

The influence of federal programs on local decision making is an area of increasing significance about which very little is known. There are prevalent crash program mentalities and the psychosis that "available federal money must be spent, somehow" which have serious consequences for the rational use of funds.

There has been very little research on the effectiveness of various federal programs. Interpretive reporting and evaluation of various investment programs are essential. Insiders' reports on any program will necessarily be favorable, for they reflect the growth of vested interests. Such reporting leads inevitably to a "crisis of credibility" because of the limited usefulness of inside evaluations.

Evaluations must be done by outsiders. They are made difficult by certain constraints. For example, the Elementary and Secondary Education Act prohibits national testing, thus depriving the social scientist of a valuable tool for comparative analysis.

4. *How Can We Best Evaluate the Economic Decision-Making Criteria?*

The central considerations include the determination of the rates of return on alternative investments and the adequacy of our analytic tools for making such determinations.

Of special concern is the type of analysis characterized as "cost-benefit."[1] Little is known about the private (including opportunity) or public costs of past, present, or contemplated programs. It is not possible to describe accurately the production functions of various educational investments. Accounting techniques should be improved to show more clearly the differential costs of various programs.

Even less is known about the actual or potential benefits of alternative investments, either for individuals, for GNP, or for society in a broader (citizenship) sense. Various approaches are possible to assess the benefits of alternative investments in terms of their contributions to what students bring into the processes, but their relative merits are not known. Examples include measures of increases in skills, effects on dropout rates or on crime rates, and measures of value added (by isolating the effects of investments on streams of earnings). The last of these seems to show greatest promise for the application of economics. The purpose is to measure, in economic terms, the transformations brought about by investments in terms of achievement and occupational performance.

Value added analysis is largely dependent on the availability of information on earnings. Unfortunately, precise data are not easily obtainable. Social Security data are of limited usefulness and are available only through written authorizations by the individuals. Tax data are generally not available. Getting authorizations or obtaining such information directly through interviews is very costly.

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[1] The concept of cost-benefit analysis does not imply the lowest expenditures per student but does suggest the most efficient use of resources. The benefits from expenditures must be considered in terms of the *quality* of results as well as in terms of the numbers of students trained.

Any effort to measure benefits of investments should consider the social and external results, although these may be very difficult to measure. Measurement should not consider only the value added to individuals as economic producing units, for education in the fine arts, humanities, citizenship, etc. have great social values. The contribution of education to the individual's ability to get along with others may be measurable.

Little is known about the relationships among the inputs and outputs of various investments. For example, how do the inputs and outputs of on-the-job training and vocational education compare? There is insufficient quantitative information necessary to determine optimal input mixes to attain a given end. The effects of various systems of education, or of various programs within any given one, on-job performance or earnings, are not known. Concepts and tools have not been applied to specific problems such as what inputs would be necessary to achieve what level of improvement in the dropout problem.

A major possible development to which economists could make great contributions is the movement toward the goal of universal opportunity for two years of post-high school education. It may be possible to measure the costs, opportunity costs, and likely benefits of alternative emphases. The impact on present employer and public investment programs, on existing high school and college programs, on the demand for teachers, etc. could be investigated. It may be possible to explore, based on demand projections, the nature and composition of programs in various geographic areas and how they might best be coordinated with the changing needs of technology and markets. Careful attention should be paid to how such a development would relate to the problems and programs of the disadvantaged. Who would get the main benefits? Would such a development widen the gap between the disadvantaged and the rest of the community? What role could such a development play in the retraining of the technologically displaced and of the older worker? The point is that although the school system may move rapidly toward fourteen years of public education, and the vast expenditures that this will require, there are few usable economic criteria to guide the crucial policy decisions which must be made early in its evolution.

5. *How Could More Rational Criteria Be Better Integrated Into the Decision-Making Processes?*

Close attention should be paid to our ability to make present and future knowledge easily available to decision makers in terms meaningful to them. We should work closely with decision makers in continually influencing and assessing society's educational goals in terms of the economic implications of alternative investments in human resources. To do this the basic relationships between education and the changing economy and society must be investigated. It seems necessary to relate on a continuing basis educational systems to the needs of a rapidly changing environment. It is probable that all important decisions should be made in terms of the local economy as it relates to the wider, including national, economic environment.

5

THE MARKETS FOR AND MOBILITY OF HUMAN RESOURCES

1. *Markets For Human Resources*

The operation of the market for human resources, or more precisely various particular submarkets, has long been a subject for research and investigation by social and behavioral scientists. Economists have traditionally led the procession of investigators.

With the economy operating at reasonably full employment levels during the late 1940's and most of the 1950's the problem of the times tended to center more on the question of the most efficient allocation of human resources among alternative employment opportunities. When the problem is posed in this way, the neoclassical pre-Keynesian framework of economic analysis has particular relevance, because it generally begins its analysis with the assumption that *all* resources are fully employed. If full employment exists, the question then becomes one of determining the conditions under which these limited but fully employed resources are allocated among alternative and competing uses. The focus thus becomes the market as the place in which, or the process by which, the broad forces of demand for human resources interplay with the supply of human resources available for employment to establish the manner in which these resources are finally allocated.

But the analysis of the markets for human resources has in mind more than description of the process of allocation; perhaps more importantly, it seems to establish a set of criteria to judge the conditions under which resources will be "optimally" or "ideally" allocated. In order to deal with a problem of this complexity, the analytical framework, to be manageable, has had to limit the number of variables it will include and make simplifying assumptions regarding the behavior of even those selected variables it chooses to discuss.

It seems appropriate to note explicitly the basic underlying assumptions of "competitive theory," the vehicle used by economists in their consideration of the problem of "optimum" allocation of human resources. They are as follows:

a. As noted above, full employment conditions are presumed to exist; at worst, full employment is regarded as an equilibrium condition toward which the economy moves or attempts to move.

b. Free choice is presumed to exist as an environment in which consumers make decisions about expenditures of income, producers make decisions about products or services to be produced, and workers make decisions among a large number of employment opportunities. The availability of choices is presumed to create conditions under which it is impossible for any one employer, consumer, or worker to monopolize the situation in which he operates. In fact, it is assumed that any one of these is so small a part of the total market that he cannot by his own actions influence the outcome of the interplay between supply and demand.

c. It is assumed that there is a high degree of mobility in the economy, both functionally and geographically. Thus, entrepreneurs are assumed to be free to enter or exit from any industry; workers are free to move occupationally, geographically, and among different employers. Not only are the facilities for such movement available (e.g., transportation), but there is also a willingness of employers and workers to move in response to differential opportunities.

d. The availability of information is assumed, as is its dissemination among employers, workers, and consumers. Also assumed is a willingness of these groups to adjust their activities and to respond to the information they are continuously receiving. In some of the more refined analyses it is assumed that information is perfect.

e. It is assumed that all sectors of the market act rationally, i.e., in a consciously self-interested manner. Thus, employers seek to maximize profits or minimize losses; consumers attempt to maximize satisfactions to be derived from their expenditures; workers attempt to maximize the wages derived from the sale of their services.

f. Also, for purposes of this analysis, certain dynamic elements are assumed to be absent—population, consumer tastes, and technology are usually assumed not to change. Or if they are allowed to change, the analysis concerns itself largely with comparing the conditions existing prior to the change with those prevailing after the change; that is, two static situations are compared.

The analysis structured on this set of assumptions has as its purpose an explanation of the determinants of wages as the price paid to human resources for the services they render in the productive process. The interaction of supply of and demand for human resources serves to establish wage rates in particular markets. Once these wage rates are established market by market, employers and workers acting in their self-interest will respond to them. This set of responses will, in turn, ultimately determine the manner in which human resources are allocated among alternative uses, and also the manner in which income is distributed throughout the economy.

Considerable time has been spent in developing the skeletal outlines of traditional economic analysis of the markets for human resources, because in a fundamental sense that theory was the focus of discussion in the seminar on markets and mobility. For it is clear that an assessment of research needs and priorities in this field will depend importantly on a judgment of the relevance and usefulness of the "orthodox" framework.

If it is argued that (1) the objective of policy toward human resources should be their most efficient utilization (the optimal matching of skills and jobs throughout the economy); and (2) the American economy is still basically competitive with the market being relied upon to perform the allocative function, the primary research need is to determine how efficiently the market is performing this function. If the competitive model in its present form can predict, say, 70 per cent of market behavior and results, research directed toward improving its predictability may well promise the maximum payoff. If the 30 per cent of behavior and results not accounted for by orthodox theory is the result of market imperfections or inefficiencies, the highest payoff to be derived from the limited resources available for research may be argued to accrue from efforts designed to identify precisely the nature of the imperfections and inefficiencies. Once this has been done, the development of policy designed to deal more effectively with these barriers would be possible.

On the other hand, if it is argued that the orthodox competitive model has chosen to emphasize the wrong things or has made unrealistic assumptions about the motivations or behavior of employers and workers in the market, the most pressing need is to develop a new and different conceptual framework for thinking about the problems of more effective development and utilization of human resources. Such a new framework would presumably include a much heavier emphasis on social and/or psychological variables than do studies emerging from the traditional economic framework.

Between these two polar positions a third might be carved out. It may be that the competitive model explains 70 per cent of existing market behavior and results. Its failure to account for the remaining 30 per cent may rest not on "imperfections" which are amenable to correction by policy but on the fact that the remaining 30 per cent do not respond to competitive incentives. Improvements in the status quo may then rest upon the development of new techniques not necessarily designed to make more competitive the 30 per cent aberrations, but to evoke in that sector a set of responses that improves the utilization of resources included in that sector by appealing to incentives which govern the behavior of those for whom the competitive rewards are insufficient.

If there is no consensus about the adequacy of the methodology embodied in the competitive model for explaining markets and mobility, there is clearly a need for continuing research around this topic, research which would be "basic" as well as "problem oriented." These would involve both (1) testing of the competitive model in a variety of situations, particularly over periods of the business cycle which involve varying levels of employment; and (2) the inclusion of psychological and sociological factors which impinge upon economic variables and a more precise determination of the manner in which and the circumstances under which they affect the direction, pace, and intensity of economic variables.

There is considerable concern over the question of the objectives of policies in the area of labor mobility. Traditional competitive labor market analysis has as its objective the establishment of norms which are basically economic in character—that is, the efficient or optimum matching of particular skills with particular jobs as pointing to policies which imply that under all circumstances and in all conditions the appropriate adjustment is that in which workers are altered to meet the needs of employers. There are other possible objectives of policies in this area. One would be to affect mobility in such a way that it eliminates poverty. Another would be to reduce intergroup income differentials. A third might be to devise means by which demand might be influenced to adjust to the supply. Policies designed to accomplish these objectives may not produce the most efficient use of human resources in an economic sense. But there may be offsetting gains in such policies which point to their desirability, such as enhancing and improving the participation of individuals in community life, or in raising the sense of satisfaction of workers' experiences in the work process. At present these values are difficult to quantify and measure in any precise way. It would be useful, however, to develop more appropriate measures and yardsticks which would allow more meaningful generalizations about these matters. It may be possible, for example, to devise certain key indices which would serve as surrogates for measurement of such seemingly subjective and non-quantifiable notions as "worker satisfaction" or "participation in community life."

2. *Mobility Of Human Resources*

The problem of mobility of human resources is a subject which has quite understandably received considerable emphasis from economists in the past two or three decades, because mobility is the trigger mechanism in the orthodox competitive model. The movement of firms into or out of industries or of workers into or out of jobs, occupations, and/or localities in response to existing or potential economic rewards (larger profits or higher income) is the process by which efficient allocation of resources is achieved in a competitive system. Empirical studies of the mobility of human resources have been of two principal kinds: (1) the experience of workers following shut-down, and (2) the hiring practices of employers in rural areas.

The stability of these findings suggests that further studies of this kind are not high priority research needs. What is more important is innovation in mobility studies that are more than additive to existing findings. Needed now are longitudinal studies which are oriented at least as much toward the behavioral and motivational aspects of the movements of workers geographically, occupationally, and into and out of the labor force as to the economic aspects which have thus far been stressed.

Longitudinal and behavioral studies may be of two major types: (1) those which are based upon extensive case histories of past mobility patterns of workers; and (2) those which follow behavior of workers from the present into the future. Greater precision and reliability are likely to be found in studies of the second type, because case histories of past mobility gathered by interviews or questionnaires encounter the serious problem of inaccurate or imperfect recall by the respondents. On the other hand, longitudinal studies aimed at the future involve long term commitments of researchers or research organizations and are generally expensive. For these reasons the initial approach might best be pilot studies involving a sample of workers with a given set of characteristics whose movements are followed over a period of five to ten years. Despite the voluminous work already done on labor mobility, current research is necessary and deserves attention because of the substantial change in the composition of the labor force, particularly with additions of secondary workers (married women, part-time and intermittent teenage and female workers, etc.). It would be helpful also if such studies were done under varying economic conditions.

Another significant focus of studies of labor mobility is the role of institutions in promoting or hampering mobility. The trade union has thus far been studied most closely in this connection. There are, however, other important institutions deserving study. Particularly when the economy is approaching or is at "full employment," impediments to the effective allocation of resources into expanding occupations become critical. Bottlenecks develop, and wages and costs tend to rise. It is important to identify the specific nature of these bottlenecks; probably the most important starting point would be at the entry level. Institutions which might be investigated in this connection would include trade unions, licensing requirements, training requirements, apprenticeship, social security, and pensions. Expanding and shortage occupations might also be selected for study.

Institutions which are not solely economic but which may relate to mobility are also in need of study and evaluation. Assertions are commonly made about the relationship between education and mobility, both in urban ghettos and rural depressed areas, but as yet the precise relationship has not been established. Studies designed to cast light on the question of the extent to which and the circumstances under which education through the high school increases mobility and also on the question of whether education by itself is a sufficient condition to induce mobility would be helpful. If it is not, what package of ingredients does have this effect?

It is interesting that there have been many treatments of the subject of the risk-taking personality as it relates to entrepreneurship. Yet there seems to have been no parallel investigation of the characteristics of the risk-taker among wage earners. A question of importance is whether the willingness to move, to seek out and accept challenges in the face of uncertainty, is as much a matter of personal characteristics as it is a response to the prospect of economic gain.

There was agreement that our past measures of mobility are incomplete because they fail to take account of the mobility that takes place within a firm. The internal labor market has been neglected, as have studies which reveal the relationship between the internal and external labor markets. Such studies should include not only the measurement of the extent of internal mobility but also of its determinants. Occupational, industrial, and temporal differences are very likely to be found. An important subject virtually untouched is the problem of how to prepare people who are descending in job status.

There has been a growing acceptance of cost-benefit analysis as a technique in evaluating the phenomenon of labor mobility. However, certain caveats are urged. Cost-benefit analysis should look not only at the dollar outlays and dollar returns from given programs; it should also come to grips with the problem of ascribing values to certain social costs and social benefits. This important task of assigning values to non-pecuniary costs and benefits and of noting appropriately changes in these values over time is regarded as a very high priority item. The phenomenon of spillover effects or externalities is vital to adequate assessment, because it seems likely that the money costs of current and future programs will rise, particularly if programs become increasingly concerned with the hard core disadvantaged unemployed. Research designed to develop meaningful and reliable measures of costs and benefits could make a significant contribution.

A serious problem in the matter of labor mobility is the lack of accurate data and measurement concerning patterns of regional migration. At the present time measures of net migration into and out of regions or markets are crude and imprecise, yet such measures are vital to the development of public policy dealing with particular geographical areas.

The emerging policy programs in the area of human resources training, development, and placement should include provisions for the inclusion of research and evaluation of the extent to which actual results correspond to the policy objectives of the programs. It would be optimal if the action program included from the outset a role for research and evaluation before the program gets underway. If it were, research and evaluation could also be direction-guiding when they detected poor results at an early stage.

3. *The Role Of Information In Markets For Human Resources*

Traditional competitive analysis of the markets for human resources emphasizes mobility and underlines the importance of information and knowledge about the markets by both employers and workers. It is assumed that when persons or institutions have more and better information about the markets they will be in a position to make better decisions; it is also assumed that when they possess better information they will act upon it in a rational, self-interested way in order to take advantage of the economic rewards accruing from these actions.

It is important that research be carried on to measure the extent to which information actually plays this role in the operation of the market for human resources. Is it correct to assume that workers, even if they have complete and accurate information, respond to it in the manner posited by the theory? Or are sociological and psychological factors more important in determining the character of workers' decisions? It seems imperative that sociologists and psychologists become more heavily involved in these research questions of the behavioral patterns of workers in order that their findings can be incorporated into attempts to develop policy regarding the market for human resources. If the assumption of the competitive model is incorrect, this has far reaching consequences, for certainly most of present policy is based on that assumption.

Despite the fact that economists have stressed the importance of information for the better functioning of labor markets, there has, surprisingly, been relatively little done on the subject of the economics of information in these markets. Certainly most studies indicate that job seekers have incomplete information concerning available jobs. There has typically been a presumption that such incomplete information was another "imperfection" of the market. However, information is clearly a "product" or "output" subject to economic constraints. Thus incomplete information may reflect cost-benefit relationships in the acquisition of additional information rather than some institutional imperfections. This approach suggests that the production of information may be amenable to different technologies, depending on the scale of output, the type of information required, and the clientele served. This view of the operation of labor markets suggests several significant research areas.

One of these areas is the economics of counseling. Considerable interest and resources have recently been directed toward vocational counseling. In economic terms, counseling is a technique for improving the quality and quantity of information on the supply side; the job seeker may improve the information he has concerning present and future job opportunities and his own occupational aptitudes. Until now, research on counseling has been largely the province of the psychologist. But it seems also to be a fruitful area for economic analysis, some of which is reasonably identifiable currently. What are the component and separable parts of the counseling function? What kinds of labor market information are associated with the different components of the counseling function? What are the economies of scale with respect to each component? To what extent can the counseling function be "disintegrated" in order to achieve maximum return from a given cost? What kinds of clientele are best (most efficiently) served by particular components of the counseling function? For example, it may be that a new entrant to the labor market will benefit most from information concerning an assessment of general categories of occupational opportunities and by an appraisal of his own aptitudes and interests. On the other hand, an experienced job market participant with a transferable skill might benefit most from information concerning specific job opportunities, including hiring standards, wage data, job security, etc. Given the "economics" of the production of information through counseling and the requirements of different classes of clientele, what are the optimal arrangements for carrying out effective counseling with these various clientele groups? The same kind of analysis could be carried out with respect to different kinds of labor markets, as distinguished from classes of clientele. Would natural, unstructured markets require different counseling techniques than highly institutionalized, structured markets?

There is much research to be done regarding counseling as a whole. It seems unnecessary to consider counseling through its various parts and the interaction of those parts. The labor market is merely a part of the total. The different types of counseling can be defined in terms of their roles, personnel, job market, and clientele. Although there are certain differences among types of counseling, and they are often kept separate, there is a growing feeling of expert opinion that employment counseling and educational counseling have many common aspects and experiences which are making the distinction less sharp. Because of the increasing attention to the role of education in preparing people for the employment experience, school counseling is receiving more attention. A number of questions are pertinent. What information does the school counselor have at his disposal to assist in the placement of the advanced, average, and below average youngsters? What does he need that he now lacks? How does this vary among schools and communities? Particularly, how does the counselor get information about the labor market, and how good is that information? On what basis does a counselor advise a person about preparing himself for possible future changes in the labor market?

An area needing much work is the question of how the evocation of initiative takes place. This is a particular problem in the case of people who have, over time, lost initiative, though it obviously relates to the entire spectrum of human resources.

Much of the contemporary effort to maximize use of previously neglected persons has centered about "providing" material resources for them: housing, food, and salaries. While these efforts are undoubtedly useful, psychologists are now suggesting that the development of the inner resources to feel adequate to "earn" these would result not only in an economy of effort and funds from the society, but more significantly in a continuous effort to achieve one's fullest on the part of the persons we have in mind. Particularly, the culturally deprived and disadvantaged have seemingly lost their capacity for sustained, individual effort through generations of surrounding evidence of their incapacity. The awakening of their feelings of adequacy in the evocation of their own initiative is perhaps the greatest challenge to the behavioral scientist and to those who seek to maximize the potential of human resources. Mobility in itself, a relatively small part of the over-all problem, illustrates the issue. No one moves unless he feels he has a better opportunity and can handle the chance. Historically, the brighter Negro has migrated to the North; while there exists some argument concerning the matter, there is considerable evidence that those who migrated from the European problems were the brighter ones, the ones with vision and feelings of ability to handle the move. The mobility issue needs to be separated from the "wandering" issue. In human resources mobility the concern is with the "stable" mover—one who will move to another community and set up a stable family quickly and move into productive work. This is the person who has manifested initiative.

While some of the contemporary approaches will no doubt result in increased initiative over the generations, it is apparent that this is an area of research which is of considerable significance. The evaluation of the effect of increased opportunity, job placement counseling, guaranteed salaries, better food, etc. upon sustained initiative should be explored. However, those approaches which give promise of more immediate return need also to be studied. Some of those tried only in limited fashion include the use of a counselor or a helping person. This is perhaps best represented by the traditional sponsor for a budding musician. In its more general aspect the problem would be to explore the role of helping persons, taking differing roles, in evoking initiative from persons whose abilities previously have been essentially dormant.

Little has been done on the relationship between what the individual brings to counseling in the form of background, education, and experience and the impact of counseling on his choices. One of the most serious deficiencies at present is the lack of reliable measures of the effect of counseling on the job-seeker.

There is currently evidence that the person going to the counselor is the problem person. Yet presumably counseling has a role to play in the experiences of "normal" workers and job-seekers. Probably the task of reaching these two groups requires different techniques.

The general agreement is that counseling needs to be regarded as a continuing useful tool, not merely as a "one-shot" phenomenon at the outset of a work career but at various points in the job-seeking and work experience. It is known that job-changing is a rather general phenomenon. On what basis are these job and career choices made? Should the counselor attempt to advise the client of the "proper" career for him, or should he merely lay out the map of information and leave the choice to the client, even if this means a flow of resources into declining sectors of the economy? Are most people satisfied with present jobs they hold? If not, why not? Can they be helped to acquire more satisfying jobs? What is the role of counseling here?

The role of labor market intermediaries is presently receiving increased attention both as a matter of academic interest and of public policy. In this connection, there have been recurrent attempts to "improve" the public employment service, and there is a recognition of the growth in the number and variety of private employment agencies. Clearly a primary function of these agencies is to collect and disseminate labor market information. At this time, however, there is little in the way of systematic data available regarding labor market intermediaries. In this connection, a number of research questions are suggested. What is the number of labor market intermediaries at present, and how has this total changed over time? How may these intermediaries be classified with respect to geographical scope, clientele served, and type of information produced? What have been the differential growth rates of the categories of intermediaries? What factors determine the "price" or fee charged for the use of intermediaries and the incidence of the fee on the supply and demand side? Why are intermediaries used with greater frequency in some kinds of markets than others? What variables have influenced the organization of the labor market "information" industry? Why have public intermediaries been more important in some markets than others, despite repeated efforts to "improve the public employment service"? What kinds of information are provided by intermediaries, and how do they supplement or replace informal channels of information that have been so heavily emphasized in traditional labor market studies?

4. *Studies Of the Markets For Human Resources*

In addition to the questions of methodology, labor mobility, and information, the issue of unresolved problems of research in the markets of human resources still remains.

There is strongly expressed sentiment that the "over-all" labor market concept is of limited use today. Rather, most problems center on enclaves of people who do not apparently compete or interact with each other. Market studies should focus on these enclaves around questions such as how these people get jobs, what kinds of jobs they typically secure, their experiences on the job, where they get market information, the characteristics of the unemployed and underemployed, educational attainments, and their perception of the labor market. Research should be directed to finding solutions to their problems in the market, toward identifying institutions which can be employed in the solutions, identifying more precisely the costs of helping them as compared to the benefits of these programs, both directly and indirectly, with cognizance taken of both money and social magnitudes and particular emphasis on identifying the spillover effects. Much work is needed on the sociology of unemployment and poverty and its effect on family life, attitudes toward work, and perceptions of the labor market. The entire issue of welfare programs, their impact on the psychology and dignity of the individual and their effects on motivation, is one deserving consideration by all the behavioral sciences, not excluding economics.

The coincidence of the interest in "investment in human resources" with public policies designed to promote the mobility of the work force has focused the attention of the labor economist on various techniques for the acquisition of skills. To date, research in the area has taken two directions. First, there has been some systematic effort to estimate the amount of resources invested in training and the rate of return on this investment. Second, some attempt has been made to determine the method of skill acquisition by present members of the labor force through various surveys. It would be desirable to extend these studies with an examination of the determinants of worker and employer choice concerning the optimal method of skill acquisition.

On the employer side, what are the significant variables which cause particular employers to invest in on-the-job training, formal training programs, or, alternatively, to seek to acquire established skills in the labor market? The stage of the business cycle will clearly be an important consideration. But beyond this factor, other variables such as average firm size, turnover, the nature of the skills, etc. will have an important influence on this decision.

On the supply side, other variables will influence the decision to acquire a particular skill through formal training or on-the-job methods. For example, is there a declining effectiveness of apprenticeship training programs as a source of skilled manpower? As a related question, some research attention probably should be given to the consequences of licensing provisions and other manifestations of "professionalization" of the labor market. How widely used is on-the-job training now? Is this a function whose cost should be borne by private industry or by government? What criteria are significant for an evaluation of the effectiveness of on-the-job training? Is immediate job placement a good test of success?

As noted earlier there is a serious need for systematic research on the relationship between hiring standards and the objective requirements of the job. Also, the parallel relationship between hiring standards and in-plant mobility is largely unexplored. Are employers acting rationally when they set as a high school education a requirement for jobs for which such training is seemingly nonessential?

An investigation of the development of labor markets for "new" occupations is a promising area for research. The development of markets for "new" occupations provides an opportunity to gain significant insights into various aspects of labor market behavior. The fact that current technology has created many new occupations makes such research particularly timely and feasible. In this connection, various related questions may be asked concerning the development of these markets. At what point do the supply of and demand for the occupation become sufficient to induce the emergence of an identifiable market? What changes take place in the geographical scope of the market as the supply of labor for the particular occupation is increased? What is the process by which specialized subsectors of the market develop? What is the nature of the development of information systems in the market? What is the role played by informal channels, by formal intermediaries? What are the patterns of mobility, and how do they change over time? For purposes of comparison, new occupations may be selected from blue collar and white collar categories, e.g., instrument man and programers. Similarly, comparisons can also be made among occupations at different skill levels.

The subject of the scope and structure of labor markets is far from settled. With few exceptions, most labor market studies have been conducted within politically or administratively defined areas. Although this kind of framework is operationally plausible, there is no conceptual necessity for taking the labor market as given. It is very likely that the scope of the labor market varies substantially, both over time and cross-sectionally, because of differences in the kinds of industries and occupations involved. There may also be variations that depend on the nature of the supply of labor. Differences in scope may have much to do with market behavior, especially the mobility of various social-economic groups in the population and labor force. There is need for a study of the determinants of labor market scope and structure, with attention given to the conceptual as well as the analytical aspects. Two types of studies might be made:

a. One which attempts to trace changes in the scope of labor markets over time under the impact of changes in industrial composition and in the nature of the labor supply.
b. Another type of study—comparative or cross-sectional—in which a variety of labor demand and supply conditions might be examined with time held more or less constant.

For either approach, some common measures of the scope of the market would have to be devised. Perhaps this could be done with some concept of commuting distance, weighted to take account of personal and social factors that may be associated with worker mobility and job-seeking patterns. Either type of study probably also ought to take account of the total ecology involved, including residential patterns, community transportation facilities, labor market information services, and education as well as the resource base.

One result might be a typology of labor markets defined in terms of the factors that determine their scope and behavior. The findings ought to have practical applications for the organization and programs of public employment service, the placement activities of the school system, and for the planning of urban renewal and development programs.

6

SUGGESTED PRIORITIES IN RESEARCH

The results of the analysis suggest that the four major subject matter areas be ranked as follows as to their *general* importance for research:

1. Investments in Human Resources
2. Supply of Human Resources
3. Demand for Human Resources
4. Market for and Mobility of Human Resources

This ranking reflects a judgment of the authors and is based upon a synthesis of discussions, representing a variety of disciplines and areas of endeavor, and the identification of the important questions, the extant knowledge, and work in progress.

There is a pressing need for new knowledge on many aspects of "investments in human resources." For example, almost nothing is known about the "forgotten 40 per cent" of high school students who are not in the select academic or vocational education programs, and who will continue to be the recruiting ground for the adult "disadvantaged." The "supply" area is of great importance for many reasons but especially because of the need to know much more about the "disadvantaged." The "demand" area, although potentially of great value, is of lower priority. This is partially because of serious questions concerning whether good estimates can be made because of the dynamic and changing nature of the economy. The "markets and mobility" area is one in which there is already considerable knowledge, although relatively little attention has been paid to the behavioral and motivational aspects of what have been treated almost exclusively as narrowly economic phenomena by much of the prior research.

The following enumeration of suggested priorities is presented in the order of the above four major subject matter areas. This in no way implies, however, that all, or even most, of the questions under "investment" are more urgent than particular ones under the other categories. Within each category research questions have been classified as being of "urgent," "high," or "moderate" priority. The lettered ordering of questions under these subcategories does not imply relative importance. The absence of a research area suggests its relatively low priority.

1. *Investment - Urgent Priority*

a. How can the value added of various alternative investments be assessed? Do streams of earnings provide best measures of the efficiency of various investments? In what other ways can efficiency be measured? What methodologies and techniques can be developed to obtain and utilize data on earnings? What are the interrelationships among earnings, investment, IQ's, motivation, social background factors, etc.?

b. How effective have been major past investments in human resources, such as the G.I. Bill after World War II?

c. What criteria are used in decision making, and by whom? What are the major constraints to the decision-making processes at various levels? What tests are available of the efficiency of current decision making? Are human resources demand projections used and, if so, how? How do patterns of investment relate to economic criteria, even if these are not used in decision making? What feedback mechanisms exist, and how effective are they? To what extent, and how, do employers influence decision making?

d. How adequate are the tools of analysis, e.g., cost-benefit techniques? What research would improve the analytic tools? How can cost-benefit and other techniques such as operations research, systems analysis, etc. relate to such new national goals as the universal opportunity for two years of post-high school training? For example, what would be the costs and benefits of various mixes of programs? How would they relate to employer needs and to employer ability and willingness to make investments such as on-the-job training? Would such a program increase the dropout problem? What effects would it have on the demand for teachers and on existing high school and college programs?

e. What are the significant variables which cause employers to invest in on-the-job training programs or, alternatively, to seek to acquire established skills in the labor market? How does this vary with phases of the business cycle? Size of firm? Turnover? Nature of the skills? How widely used is on-the-job training now?

f. How do objectives differ at national, state, and local levels? What inefficiencies and misallocations result from the translation process? How important, and distorting, is the crash-program mentality—the "available federal money must be spent, somehow" approach to decision making?

g. How can present and future knowledge be made available, and meaningful, to decision makers?

2. *Investment - High Priority*

   a. What are the quantitative and qualitative outputs of educational systems by nature (content) of training?

   b. How can the viability or responsiveness to change of alternative systems of education be assessed?

   c. Is it possible to develop an "educational deflator" which would make possible meaningful comparisons of the quality of education among various educational systems and institutions?

3. *Supply (General) - Urgent Priority*

   a. What factors are responsible for the differential experience of disadvantaged workers in acquiring jobs in different kinds of firms classified by degrees of competitions, size, single or multiplant firms, nature of the product, etc.?

   b. How reliable is the assumption of rational economic behavior in connection with the unemployed disadvantaged worker? Does he perceive the labor market in the way in which the theory posits? Does this perception aid or hinder him in responding to traditional incentives? Even assuming he has better information, does he act upon this information in an economically rational way?

   c. To what extent are employers acting rationally in failing to hire from the disadvantaged groups? How relevant and "objective" are the hiring criteria used by employers in measuring the capacity to perform the job? Do they bear a predictable relationship to productivity on the jobs for which they are applied in the hiring process?

   d. How do the disadvantaged learn about jobs and training programs? What are their attitudes about various occupations? Should policy attempt to channel the disadvantaged into existing institutional arrangements, or should it attempt to work through the vehicles used by the disadvantaged?

   e. To what extent can achievement motivation be transmitted to disadvantaged groups? Can this be built into education and training programs? Can entrepreneurial skills be transmitted through training in business skills directed specifically to disadvantaged groups?

4. *Supply (General) - High Priority*

   a. The work experiences of new entry workers and of younger military personnel designed to identify successful and unsuccessful methods in teaching specific skills, clusters of skills, and attitudes for successful performance controlling for intelligence, educational achievement, and the many aptitudes on which military and civilian organizations collect data.

b. What are the costs of intermittent unemployment and its effects on skill retention and incentives to work? Of underemployment?

5. *Supply (General) - Moderate Priority*

a. What are the effects of protective legislation on the employment of "protected" groups?

b. To what extent is low income, and not the personal inadequacies of the unemployed, the breeding ground for unemployment and "unemployability"?

6. *Supply* (1. *Youth*) - *Urgent Priority*

a. Are the schools as presently constituted reasonably adaptable to the needs of disadvantaged youth? If not, are there variations in curricula, in emphasis, in teaching techniques which promise better results? Can high school programs, which emphasize training for college and highly skilled occupations, develop attractive programs for "the forgotten 40 per cent"?

b. How does counseling affect the supply of young workers? In particular, how does it influence the flow of people into certain kinds of jobs, occupations, and career patterns? Where do counselors get their information, and how good is it for the present state of the labor market and for emerging patterns of employment?

c. How do young workers enter the labor market? What have been their experiences in various industries? What kinds of work experiences are most important in influencing the attitudes of young workers?

7. *Supply* (1. *Youth*) - *High Priority*

a. What are the effects of economic dependency on the attitudes of young people? What are their views toward work, money, and the future? Why is it that certain groups resist the assistance of the antipoverty programs?

8. *Supply* (1. *Youth*) - *Moderate Priority*

a. Have apprenticeship programs declined in importance? Where are they most frequently found? How do young workers find out about them? What are their attitudes toward apprenticeship? Is this an area in which counseling plays a significant role?

9. *Supply (2. Negro) - Urgent Priority*

   a. How does the Negro learn about the existence of a job? Where are Negroes now employed, and where are breakthroughs taking place? Are these real or nominal? What kinds of tactics and strategies are available to convert tokenism into real penetration?

   b. What has been the performance of Negroes on the job, industry-by-industry or occupation-by-occupation? Why have Negroes moved up in some industries and not in others? Is is due to different seniority systems? Is it related to labor organization among Negroes or in certain industries? Is technology involving greater than proportional displacement among Negro workers?

10. *Supply (3. Women) - Urgent Priority*

   a. What is the reserve of female human resources *not* in the labor force? Who are they, and what skills do they possess? To what extent does the absence from the labor force reflect discouragement? What are the reasons for this? How might modifications of work schedules to accommodate women increase their labor force participation rate and improve their utilization? What would be the cost of these adaptations?

11. *Supply (3. Women) - Moderate Priority*

   a. What are the economic and social losses arising from the underutilization of women? Why are the full-time earnings of women only about 60 per cent of those of men, and why has the differential been widening, particularly when women average about one-half year more education than men?

12. *Supply (4. Older Workers) - Urgent Priority*

   a. To what extent and under what circumstances does the unemployed older worker simply withdraw from the labor force? What are the reasons for this? What happens to him if he does? Why is the labor force participation rate of older Negroes falling while that of the whites is not?

   b. Under what circumstances can older workers be retrained? What has been the experience with retrained older workers when they have been placed in jobs? Are there special techniques of training for older workers? Are they more costly or less effective than those for younger workers?

13. *Demand - Urgent Priority*

   a. How do employers, in the private and in the public sectors, meet their present needs for human resources? What are the major hiring policies and practices of employers? How closely related are employers' "ideal" hiring standards to the actual or potential job requirements, to the requirements of jobs to which employees are likely to progress (often by seniority), to the qualifications and performance of present employees, to the tightness of the relevant labor markets, etc.? Are hiring standards realistic, or are they largely bound by convention?

b. What are the criteria, institutional arrangements, and mechanisms for the *internal* satisfaction of demand, i.e., relevance of seniority systems, union pressures, etc.? What do employers themselves do to upgrade their work forces in response to their own demands for human resources?

c. How do employers relate their needs to *external* educational systems? What bridges exist, and with what effectiveness, between employers' needs and educational institutions? How are these bridges designed, built and maintained? How, and to what extent, do employers influence, or seek to influence, investments in human resources, based on their present demands?

d. What is the past and present relative importance of occupations requiring no or very few specific skills? Will the expected evolution of our economy and society increase or decrease the relative demand for the unskilled and for those jobs with very low educational or retraining requirements?

e. How transferable and adaptable are skills, that is, how flexible are past and present patterns of training for rapidly changing needs? To what extent must employers replace present skills with other (new) skills, as is the case with the replacement of machinery by more modern machines which perform more and different functions? How can the human resources implications of the most important impending changes in technology, tastes, and aggregate and structural changes in the economy be identified before they attain great significance? What are the newly emerging occupations of importance? How can "early warning systems" be established to alert educational systems to the emergence of important future occupational demands?

14. *Demand - High Priority*

a. Do certain types of employers prefer to hire people with stronger general education rather than specific training? For what jobs and for what reasons? Does this preference depend, for example, on the type of industry or their growth rates? How does the preference, and/or the reality, shift in response to changing labor market conditions?

b. With respect to the disadvantaged, in what respects do employers reduce hiring standards in tight labor markets? Does employer behavior offer guides as to what investments in the disadvantaged will be most productive in terms of job opportunities? Under what circumstances and for what reasons do employers raise or lower hiring standards? What implications do these changes have for investments in human resources, and especially in the disadvantaged?

c. What are the most appropriate time periods for projections for particular occupations?

d. What are the relative merits of the macro and micro approaches to estimating demand? How can establishment surveys—information obtained from employers—be used most effectively to estimate future demand? How can other promising sources of information be exploited, including employer and trade and professional organizations?

e. How can we make useful estimates of demand resulting from specific public (and private) programs, already planned or even initiated? For example, how will the Medicare program increase demand for many types of health service personnel? What opportunities and problems does such a new program present for educational systems?

15. *Demand - Moderate Priority*

a. What are the technical coefficients of human resources in both historic and present production functions?

16. *Markets and Mobility - Urgent Priority*

a. To what extent are employers and workers motivated by rational economic considerations? To what extent are behavior and results to be explained in terms of sociological or psychological motivations? What is the effect of social and psychological factors on economic variables? Do employers and workers react as the theory assumes they will to information about the labor market? If not, what are the determinants of the evocation of initiative?

b. There is a need to make more extensive use of longitudinal studies around the question of labor mobility, to follow over time the "life cycle" of work experiences, unemployment, and mobility.

To what extent is mobility a matter of personality characteristics? Is the risk-taker more prone to move independently of economic rewards? Under what conditions do workers move? What factors loomed largest in these decisions to move? It is also necessary to develop accurate measurements of regional migration.

c. What is the role of institutions in promoting or hampering labor mobility, particularly in a situation in which specific bottlenecks begin to appear? What is the impact on mobility of trade unions, licensing requirements, training requirements, apprenticeship, social insurance, and pension plans? How do these operate in expanding occupations in which shortages begin to be felt? What is their impact at the entry level?

d. Assuming that the provision of information is a "product," the production of which is subject to economic constraints, various studies are possible. What are the component and separable parts of counseling? What kinds of labor market information are associated with the different components? What are the economics of scale with respect to each component? What kinds of clientele are most efficiently served by particular components? What are the optimal arrangements for carrying out effective counseling with these various clientele groups? In various kinds of labor markets?

e. What kinds of information and training are needed to evoke initiative, particularly in the case of people who have lost initiative? What impact does counseling have on such a person?

f. How effective is the U. S. Employment Service in its information and job placement functions? What clientele does it serve in the labor market, by skill, occupation, geographic location? How do its activities relate to employer hiring practices, both at the port-of-entry level and in-plant promotional practices?

g. With reference to "new" occupations, at what point do conditions of supply of and demand for occupations become sufficient to induce the emergence of an identifiable market? What changes take place in the geographical scope of a market as the supply in the occupation is increased? How do information channels develop? What is the role played by informal channels? By formal intermediaries?

17. *Markets and Mobility - High Priority*

a. What is the number of labor market intermediaries, and how has this total changed over time? How may these intermediaries be classified with respect to geographical scope, clientele served, and type of information produced? What have been the differential growth rates of these categories of intermediaries? What factors determine fees? What is the incidence of these fees on the supply and demand side? Why have public intermediaries been more important in some markets than in others? What kinds of information are provided by intermediaries, and how do they supplement or replace informal channels of information so heavily emphasized in traditional labor market studies?

18. *Markets and Mobility - Moderate Priority*

a. What is the relationship between external mobility and internal movements in the firm? How is it possible most effectively to prepare workers who are descending in job status?

7

SUMMARY AND CONCLUSIONS

This report seeks to develop a guide for the allocation of research resources in the field of human resources. It formulates specific suggestions concerning where research resources might be employed to yield "greatest" returns in terms of usefulness for the formulation and implementation of public policies with respect to the development, allocation, and utilization of human knowledge and skills in our rapidly changing economy. It emphasizes research which may aid in the resolution of the problems of those categories of human resources which are underdeveloped and/or underutilized—sometimes called the "disadvantaged"—by reason of technological change, geography, sex, age, race, low levels of skill or education.

The "research guide" reflects the conviction that a broad concern for the development, allocation, and utilization of all levels of human resources, in thriving as well as in "sick" areas, is necessary for the effective formulation and implementation of public policies related especially to the "disadvantaged." If the problems of the "disadvantaged" groups are to be more meaningfully met, it seems necessary that public policy concern itself not only (and certainly not exclusively) with finding jobs for the unemployed or "unemployables." The significant question of major importance is how to develop and utilize most effectively the human potential in this large reservoir of human resources. To approach the problem in this wider context requires the careful investigation of the complex of relationships between the "disadvantaged" and the social and economic environment in which they operate. The exploration of these relationships will be substantially enhanced by the use of longitudinal studies designed to determine more precisely the kinds of economic, psychological, and sociological problems encountered by the "disadvantaged" over time, the reasons for their existence, and the most promising policy approaches to mitigate and deal with these problems.

This is an approach, found in the recommendations of national studies of this subject, which has found its way in tentative and embryonic form into some more recent legislation. However, much research will be required to establish better and more effective guidelines for policy formulation. This is the context in which the project to develop a "research guide" was developed.

1. *Methodology*

In order to appraise research needs systematically, the major elements of the human resources field have been related conceptually to the following four major subject-matter areas:

1. Supply and utilization of human resources, with special reference to major forms of discrimination;
2. Present and anticipated demand for human resources;
3. Investments in human resources; and
4. Human resources markets and mobility.

For each of these subject-matter areas the following have been attempted:

1. To identify the major problem areas or questions and classify them by relative importance for policy formulation and/or implementation;
2. To appraise, for each, the extent and operational value of relevant knowledge and of research in progress;
3. To appraise, for each, the susceptibility to further research; and
4. Based on these considerations, to suggest priorities for future research.

The major inputs consisted of a series of eight seminars held between December 15, 1964, and April 28, 1966, in which experts from a variety of academic disciplines, voluntary organizations, federal and state governments, and private research organizations utilized their knowledge and experience, supplemented by bibliographical searches, to offer advice on research priorities. The first two seminars provided background, especially concerning research, development, and demonstration in adult training and retraining. The next six seminars dealt with the formation of specific research priorities, four of them having centered on the four major subject-matter areas mentioned above.

Not including personnel of the Institute for Research on Human Resources from several disciplines, the ninety-one outside participants came from twenty states and the District of Columbia; from eleven types of organizations; and from a wide variety of disciplines, especially economics, education, sociology, and psychology.

This "research guide" does not pretend to reflect an exhaustive, detailed coverage of the state of knowledge as it relates to any given hierarchy of social needs. Rather, it attempts to represent a systematic identification of some of the most urgent research priorities on which there is general agreement by experts. Any "research guide" should be continually reviewed and updated as needs, methodologies, and knowledge evolve.

Each of the major subject-matter areas considers the nature of the subject and the interrelations between its elements and those of other major subject-matter areas. For each of the subject-matter areas priorities for research are suggested based on a systematic consideration of needs, methodologies, and knowledge.

2. *Suggested Priorities*

Chapter I identifies common themes which emerge from the analyses of the four major subject-matter areas. Chapter VI ranks the four areas by relative, general importance for research, and finally, within each, enumerates suggested priorities for specific research.

Certain common themes emerged:

a. The critical need for more and better data in most areas, and the need to disaggregate data so that its scope relates to the appropriate levels of decision making;

b. The persistence, although to a lesser extent, of the problems of the "disadvantaged" even at times of relatively full employment;

c. The need for longitudinal studies in all of the subject matter areas;

d. The great need for subnational and, especially, local studies in all areas;

e. The need for more evaluation of the effects of on-going anti-poverty and other projects and the building into them of independent, evaluative research;

f. The need to assess the human resources needs and implications of major developments such as Medicare during their planning and subsequent stages;

g. The need to disseminate research results to potential beneficiaries;

h. The great need for in-depth studies of present employer policies and practices relating to hiring, promotion, training, incentives, retirement, etc.; and

i. The need to develop and relate effectively new or proven tools of analysis, especially cost-benefit analysis, to all appropriate problem areas.

The results of this analysis suggest that the four major subject-matter areas be ranked as follows as to their *general* importance for research:

1. Investments in Human Resources
2. Supply of Human Resources
3. Demand for Human Resources
4. Markets for and Mobility of Human Resources

Within each area specific research topics have been designated as being of "urgent," "high," or "moderate" priority. This in no way implies, however, that all, or even most, of the research questions under "investment" are more urgent than particular ones in other subject-matter areas.

APPENDIX

SEMINARS: CONTENT AND PARTICIPANTS

Seminar I - Labor Market Studies and Skill Training Programs as They Relate to Community Action.

December 15 and 16, 1964

Agenda:

1. Labor market information: What can be done to predict future skill and occupational requirements in local labor markets?
2. Recruitment and selection of trainees: What means of communication can be developed to attract trainees to the programs? Is the current screening process adequate?
3. Program content and curriculum: Is a general high school education or its equivalent a greater contribution than specific skill training? Is it better to use a teacher skilled in the art of teaching or a craftsman skilled in his subject to teach training classes?
4. Program evaluation: What are the most effective means of evaluating the success of training programs? What attitudinal changes, if any, should training programs be concerned with?
5. Long-range community effects: What role, if any, should retraining play in geographical mobility? How do we measure social costs and gains?

List of Participants:

L. Bruce Alexander	Staff Representative, District 15 United Steelworkers of America McKeesport, Pennsylvania
Robert Avery	Associate Professor of Sociology University of Pittsburgh
Emery F. Bacon	Director, Department of Education United Steelworkers of America Pittsburgh, Pennsylvania
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Hy Kornbluh	Director, Division of Labor Education and Services Institute of Labor and Industrial Relations University of Michigan and Wayne State University
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William H. Miernyk	Director, Bureau of Economic Research Institute of Behavioral Science University of Colorado
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Seminar II - The Relationship Between Vocational and Technical Training and Community Needs

April 29 and 30, 1965

Agenda:

1. What kinds of programs should be designed to serve the needs of unskilled school dropouts?
2. What types of programs should be developed to meet future labor market needs?
3. What, if any, differences should be provided for in the type of training offered to older adults as opposed to those who have recently left school?
4. Should training programs for instructors of adult vocational and training programs be developed?
5. How can vocational schools and training programs better accommodate those who have previously failed out of standard school programs?
6. What role should general education assume in the post-school vocational and training program?

List of Participants:

James A. Bowser	Director, Junior College Division Norfolk Division Virginia State College Norfolk, Virginia
George L. Brandon	Head Department of Vocational Education The Pennsylvania State University
Kenneth E. Carl	Director Williamsport Technical Institute Williamsport, Pennsylvania
Catherine F. Grant	Assistant Director Board of Public Education School District of Philadelphia
Sylvia G. McCollum	Program Planning Officer Division of Adult and Vocational Education Bureau of Research, U. S. Office of Education
Norman R. Miller	Project Director for Action-Housing's Action for Employment OMAT Demonstration Project Pittsburgh, Pennsylvania
Lawrence W. Prakken	Editor and Publisher *School Shop,* The Magazine for Industrial Education Teachers Ann Arbor, Michigan
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Seminar III - Overview of Problem, Approaches, and Research Needs

October 28 and 29, 1965

Agenda:

1. Suggestions on the over-all problem and on our approaches to it.
2. Overviews of all subject matter areas and how they are related.
3. General appraisal of broad areas of critical research needs.

List of Participants:

Leonard Adams	Professor and Director of Research and Publications New York State School of Industrial and Labor Relations Cornell University
David Bushnell	Director Division of Adult and Vocational Research Bureau of Research U. S. Office of Education
Frederick Harbison	Director, Industrial Relations Section Princeton University
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Seminar IV - The Supply of Human Resources

December 8 and 9, 1965

Agenda:

1. The major elements of the domestic supply of human resources.
2. Special reference to the present and anticipated stock of knowledge and skills.
3. The utilization of human resources.
4. Special emphasis on discrimination of various sorts.

List of Participants:

Alan B. Batchelder	Professor of Economics Kenyon College
Ivar Berg	Associate Professor, Graduate School of Business Columbia University
Ewan Clague	Consultant, Office of the Secretary U. S. Department of Labor

Marcia Freedman	Research Social Scientist Conservation of Human Resources Columbia University
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Mary Hilton	Deputy Director, Women's Bureau U. S. Department of Labor
E. Ray Marshall	Professor of Economics University of Texas
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Seminar V - The Demand for Human Resources

January 19 and 20, 1966

Agenda:

1. The ability to assess for the present and for the future the demand for human resources, both aggregated and disaggregated, by local labor market and educational areas.
2. The ability to assess the demand in terms most relevant to increasing the efficiency of investments in human resources, i.e., how can estimates of demand best provide the educational systems with information necessary for the design of efficient programs?
3. What are the relationships between trends in technology, organization, demand for goods and services, etc., and trends in demand for human resources?
4. What "technical coefficients" can be developed to relate, by industry and by levels of technology and output, the present and future demand for human resources, by relevant types and levels of educational attainment?

List of Participants:

Joseph Brackett	Employment Opportunities Branch Division of Adult and Vocational Research U. S. Office of Education
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Seminar VI - Investments in Human Resources

February 2 and 3, 1966

Agenda:

1. The ability to appraise the effectiveness of present institutions for developing human resources in terms, for example, of the quantity and quality of their output and their responsiveness to change.
2. How are investment decisions made? What criteria are used in decision making, and by whom? What tests are available of the efficiency of current decision making?
3. How are broad national programs implemented at the local level? What inefficiencies and misallocations result from the translation process?
4. How can we best evaluate the economic decision-making criteria? For example, what are the rates of return on alternate investments; and what are the limitations of such approaches?

   a. How adequate are the tools of analysis, e.g., cost-benefit techniques? What research would improve the analytic tools?
   b. How and why are present data inadequate? How does the inadequacy of data relate to current decision-making?

5. How could more rational criteria be better integrated into the decision-making process?

List of Participants:

Mary Jean Bowman	Professor of Economics Comparative Education Center University of Chicago
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Rashi Fein	The Brookings Institution Washington, D. C.
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Bernard Michael	Division of Vocational and Technical Education Office of Education Department of Health, Education and Welfare
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Seminar VII - Human Resources Markets and Mobility

March 2 and 3, 1966

Agenda:

1. The major similarities and differences among markets for various categories of human resources, e.g., by skill and/or educational levels.
2. The major obstacles to the effective functioning of these markets, and how they may be overcome.
3. The relative importance of monetary, fiscal, and other factors in allocating human resources.
4. The relative effectiveness of various influences on choices of careers and of jobs, e.g., the roles of vocational guidance and the employment service.
5. What information do guidance and employment counselors provide concerning present and potential opportunities in appropriate markets? What information do counselors need, and how could it be effectively utilized?
6. The appropriateness of patterns of mobility with respect to recent and anticipated needs. What methods might be employed to increase mobility?
7. What are the cost-benefit implications of mobility? To what extent are the "rich" areas subsidized by the "poor" areas through the out-migration of human resources?

List of Participants:

Robert L. Aronson	Professor New York State School of Industrial and Labor Relations Cornell University
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Ted Landsman	Chairman Graduate Curricula and Counselor of Education College of Education University of Florida
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Seminar VIII - Review of Priorities

April 27 and 28, 1966

Agenda:

1. Appraisal of over-all relative importance of each of the four subject matter areas.
2. Appraisal, within each, of tentative research priorities identified.
3. Modification of priorities by addition or subtraction of items and by change of emphasis.
4. Ranking of priorities by relative importance.

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Curtis C. Aller	Director Office of Manpower, Program Evaluation and Research U. S. Department of Labor
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Howard E. Freeman	Director Florence Heller Graduate School for Advanced Studies in Social Welfare Brandeis University
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INSTITUTE FOR RESEARCH ON HUMAN RESOURCES

Objectives and Activities

The Institute for Research on Human Resources was organized in November 1964 for the general purpose of conducting research to explore the way in which society invests in human resources.

In its work the Institute calls on many disciplines which cross both college and departmental lines, including economics, education, psychology, sociology, and political science. Increased emphasis on interdisciplinary research is anticipated as the research program broadens.

The work of the Institute is supported by the Commonwealth of Pennsylvania and various federal agencies, including the U. S. Office of Education and the U. S. Department of Labor, the Pennsylvania Department of Public Instruction, and various private foundations.

The Institute has conducted a series of research seminars in a variety of areas, such as public assistance and health services manpower, for the purpose of delineating potential areas for research.

Its publications include:

Research, Development, and Demonstration in Adult Training and Retraining, The Pennsylvania State University, September 1966. by Jacob J. Kaufman, Grant N. Farr, and John C. Shearer.

The Role of the Secondary School in the Preparation of Youth for Employment, The Pennsylvania State University, February 1967. by Jacob J. Kaufman, Carl J. Schaefer, Morgan V. Lewis, David W. Stevens, and Elaine W. House.

A Community Organizes for Action: A Case Study of the Mon-Yough Region in Pennsylvania, The Pennsylvania State University, July 1967. by Robert W. Avery and Herbert A. Chesler.

A Guide for Research in the Development and Utilization of Human Resources, The Pennsylvania State University, July 1967. by Jacob J. Kaufman, Grant N. Farr, and John C. Shearer.

A Developmental Program for an Economic Evaluation of Vocational Education in Pennsylvania, The Pennsylvania State University, June 1966. by Ernst W. Stromsdorfer.